READ THIS FIRST

Grizzly Industrial, Inc.®

Model T33955/T33956

******IMPORTANT UPDATE******

For Machines Mfd. Since 09/23
and Owner's Manual Printed 12/23

For questions or help with this product contact Tech Support at (570) 546-9663 or techsupport@grizzly.com

The following changes were recently made since the owner's manual was printed:

- Parts descriptions have been updated.
- Manual sub-sections have been updated.
- Manual sub-section **Installing Nut** has been removed. Nut comes pre-installed on neck.

Aside from this information, all other content in the owner's manual applies and MUST be read and understood for your own safety. **IMPORTANT: Keep this update with the owner's manual for future reference.**

For questions or help, contact our Tech Support at (570) 546-9663 or techsupport@grizzly.com.

#MN23497 PRINTED IN CHINA

Inventory

The following is a list of items shipped with your instrument. Before beginning assembly, lay these items out and inventory them.

If any non-proprietary parts are missing (e.g. strings, or tuning machine screws), we will gladly replace them; or for the sake of expediency, replacements can be obtained at your local music shop.

NOTICE

If you cannot find an item on this list, carefully check around/inside the machine and packaging materials. Often, these items get lost in packaging materials while unpacking or they are pre-installed at the factory.

Inventory (**Figure 1**)	**Qty**
A. Back Plate	1
B. Body and Pick Guard	1 Ea.
C. Tuning Machines	6
D. Guitar Cable	1
E. Tremolo Arm	1
F. Tuning Machine Washers	6
G. Tuning Machine Seats	6
H. Tremolo Springs	3
I. Neck	1
J. Spring Hanger	1
K. Output Jack	1
L. Tremolo Bridge	1
M. Neck Plate and Gasket	1 Ea.
N. Pads 4 x 10 x 1.5 (Strap Buttons)	2
O. String Set	1
P. Strap Buttons	2
Q. String Retainers	2
R. Hex Wrenches 1.5, 4mm	1 Ea.
S. Bushing 2.5 x 5 x 5 (String Retainer)	1
T. Bushing 2.5 x 5 x 2.5 (String Retainer)	1
U. Soldering Wire	1

Hardware (Not Shown)

V. Tap Screw M2.2 x 10 (String Retainer)	1
W. Wood Screw M2.2 x 12 (String Retainer)	1
X. Tap Screws M2.2 x 10 (Tuning Machines)	6
Y. Tap Screws M2.5 x 8 (Pick Guard)	11
Z. Tap Screws M2.5 x 8 (Back Plate)	6
AA. Tap Screws M2.5 x 8 (Output Jack)	2
AB. Wood Screws M3 x 20 (Strap Buttons)	2
AC. Wood Screws M4 x 25 (Tremolo Bridge)	6
AD. Wood Screws M4 x 32 (Spring Hanger)	2
AE. Wood Screws M5 x 40 (Neck Plate)	4

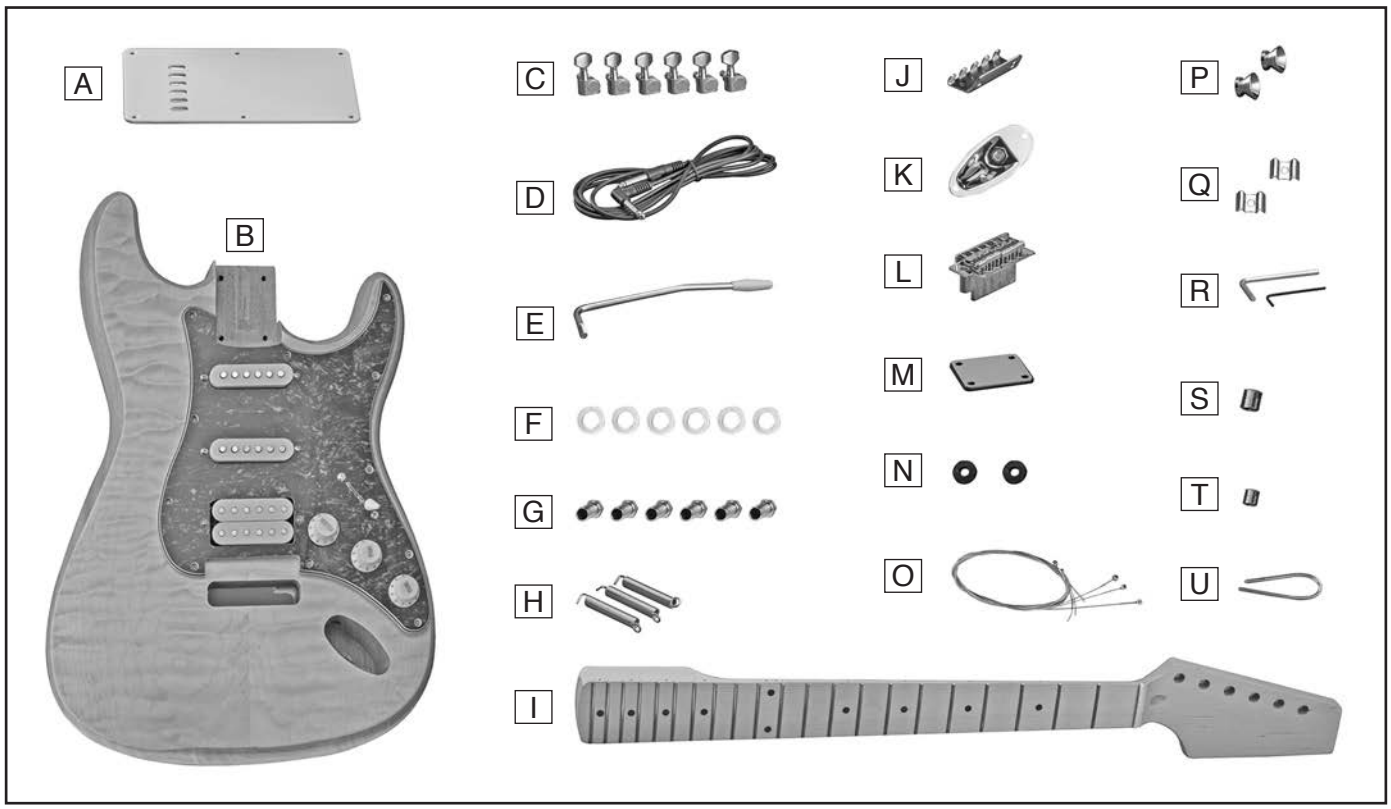
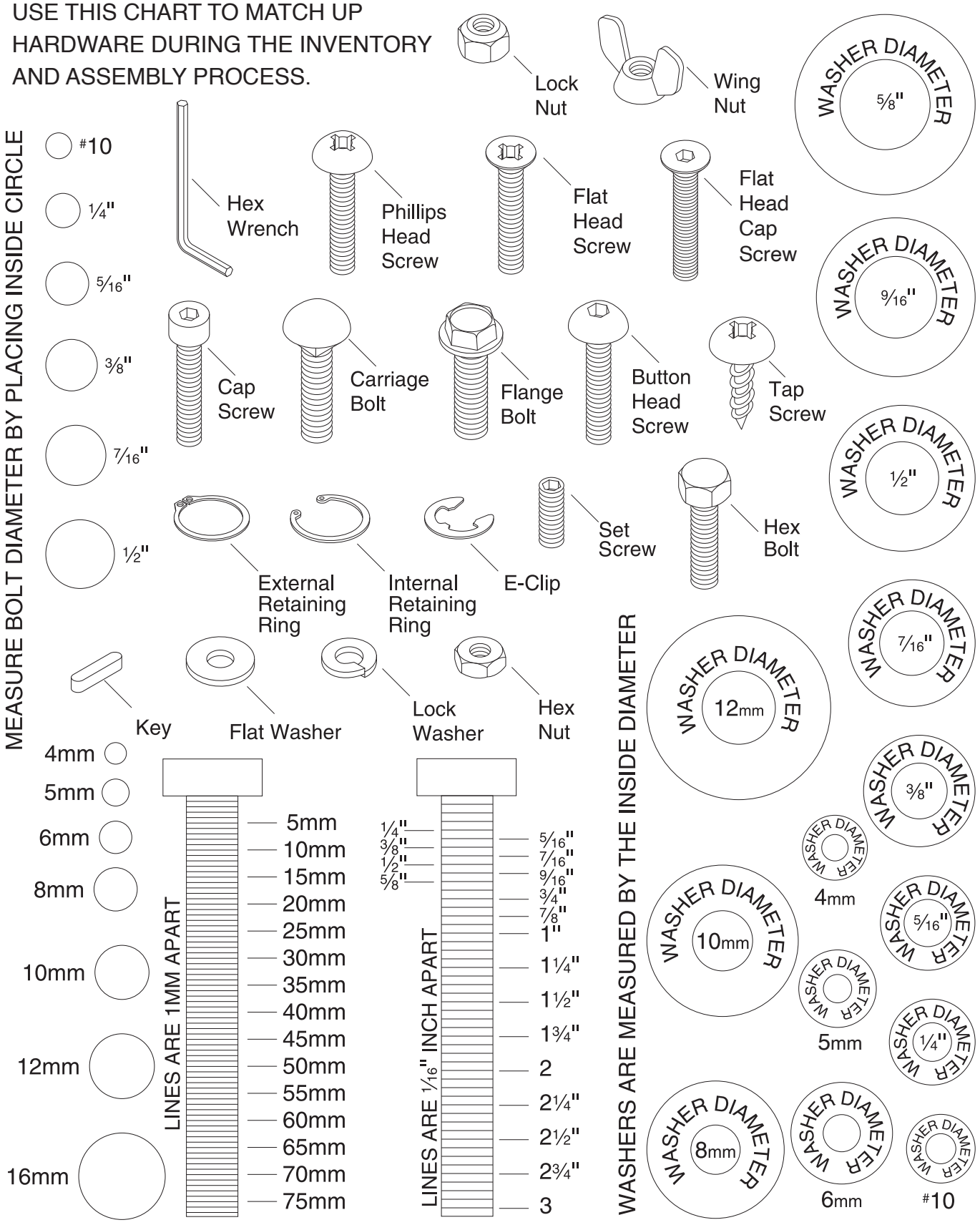


Figure 1. Inventory.

Hardware Recognition Chart

USE THIS CHART TO MATCH UP HARDWARE DURING THE INVENTORY AND ASSEMBLY PROCESS.



Installing Neck

Unless otherwise indicated, we strongly recommend using a drill press for the majority of drilling to obtain the most precise results. However, an electric/cordless drill fitted with a depth stop or a drill stand can be used if you do not have a drill press.

We recommend using a hollow punch to carve out holes in the finish before drilling. Also, a router pad placed under the guitar can help reduce scratches on the finish.

To install neck:

1. Insert neck into neck pocket (see **Figure 6**), and check to make sure neck and body are flush.

   — If there is a gap between neck and body, lightly sand high points on neck until it fits in pocket.

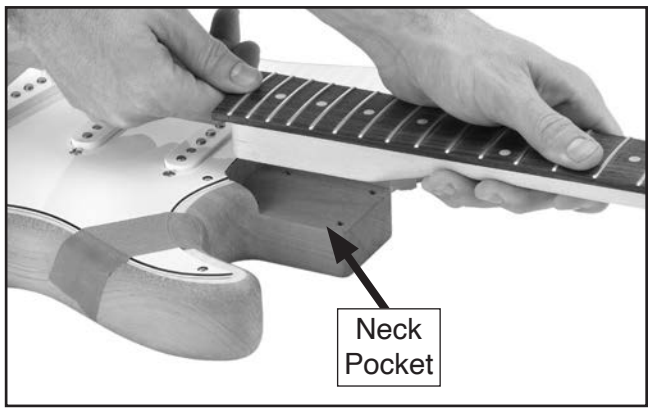


Figure 6. Example of mounting neck.

2. Using a C-clamp, press neck and body together.

3. Set guitar facedown on top of several 2x4s (cut to 6" or 12") for support.

4. Insert a 5⁄32" drill bit by hand into each pre-drilled neck hole (see **Figure 7**). While pressing down slightly, twist drill bit to make pilot holes in neck.

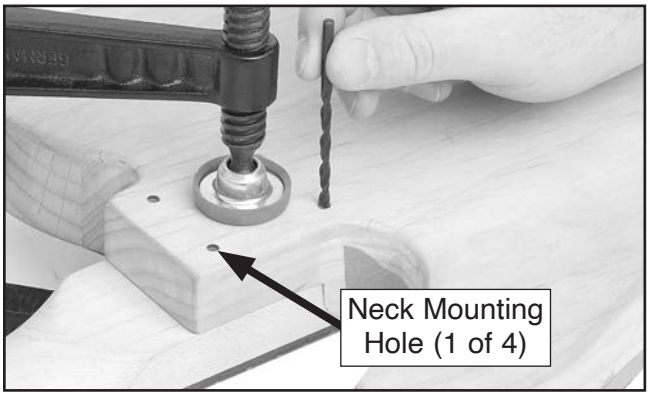


Figure 7. Making a pilot hole in neck.

5. Place neck plate and neck plate gasket on top of body so a mounting hole extends beyond body and neck (see **Figure 8**).

6. Insert (1) M5 x 40 wood screw through plate and gasket (see **Figure 8**).

7. Gently mark screw tip depth on neck with a pencil (see **Figure 8**).

   Note: *You may want to cover screw tip marking location with masking tape to avoid scratching finish.*

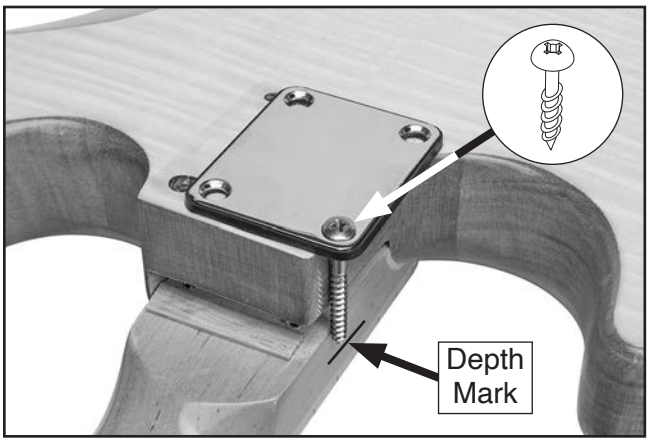


Figure 8. Depth of screw tip marked on neck.

8. Remove neck from body.

9. Set neck face down on drill press table, lower bit to touch mark made in **Step 7**, then adjust drill press to stop at this mark.

10. Lower 5⁄32" drill bit over center of pilot holes and drill holes to correct depth.

11. Place neck plate on body.

    Note: *DO NOT glue neck to body.*

12. Align mounting holes in neck, body, neck plate, and neck plate gasket.

13. Secure neck with (4) M5 x 40 wood screws (see **Figure 9**).

    Note: *Shims may need to be placed between neck and neck pocket to ensure proper height of fretboard upon installation if neck and fretboard are not even.*

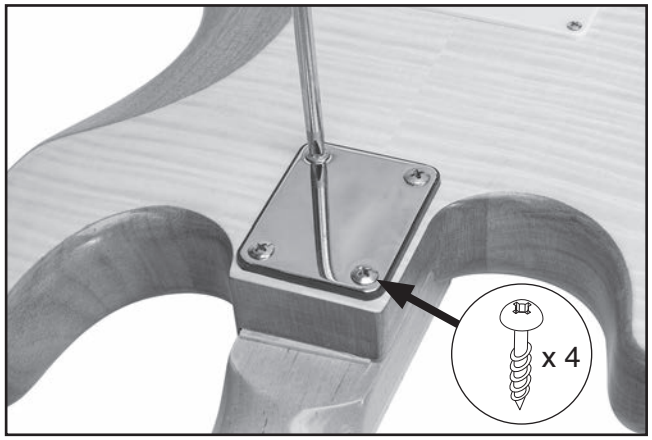


Figure 9. Mounting neck to body.

Installing Tremolo Bridge

The tremolo bridge is used to change the pitch of the strings on the guitar.

To install tremolo bridge:

1. Place tremolo bridge in cut-out shown in **Figure 10**.

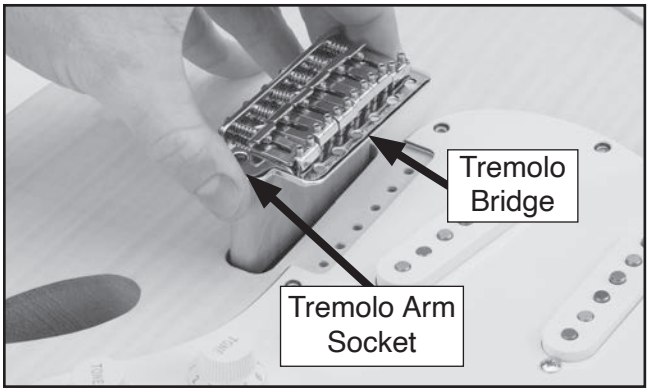


Figure 10. Example of tremolo bridge placement.

2. Test fit tremolo bridge and use a pencil to mark location of mounting holes.

3. Use 1⁄16" drill bit to pre-drill marked holes.

4. Secure tremolo bridge to guitar body with (6) M4 x 25 wood screws.

5. Turn guitar body over and place spring hanger in cavity, as shown in **Figure 11**.

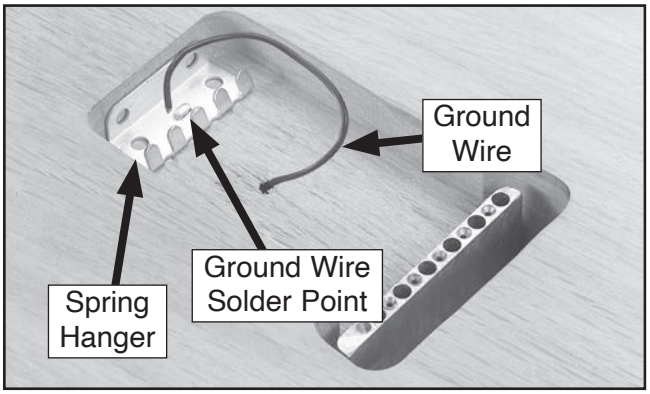


Figure 11. Spring hanger placement.

6. Secure spring hanger to guitar body with (2) M4 x 32 wood screws, as shown in **Figure 12**. Tighten screws until spring hanger is 1" from wall of cavity.

7. Clean a spot on top of spring hanger, then solder black ground wire from **Step 2** on **Page 9** of owner's manual to spring hanger, as shown in **Figure 12**.

8. Stretch three springs from spring hanger to tremolo bridge, as shown in **Figure 12**.

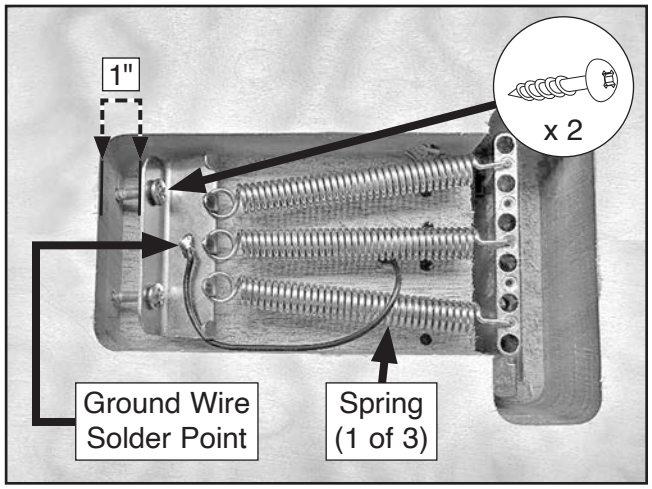


Figure 12. Springs and spring hanger installed.

— If springs are too loose and will not grasp spring hanger, tighten screws to move hanger closer to body.

9. Turn guitar face up and ensure tremolo bridge is sitting flat on face of guitar. Loosen or tighten screws until tremolo sits flat.

10. Screw tremolo arm into tremolo arm socket, as shown in **Figure 13.**

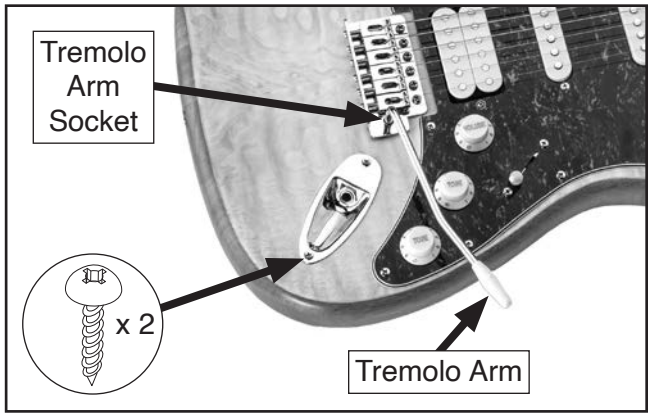


Figure 13. Output jack and tremolo arm installed.

Installing Output Jack

The output jack transfers the signal from the guitar to the instrument cable and amplifier to produce sound.

To install output jack:

1. Consulting **Step 3** on **Page 9** of owner's manual, solder black wire to output jack sleeve, and yellow wire to output jack tip, as shown in **Figure 14**.

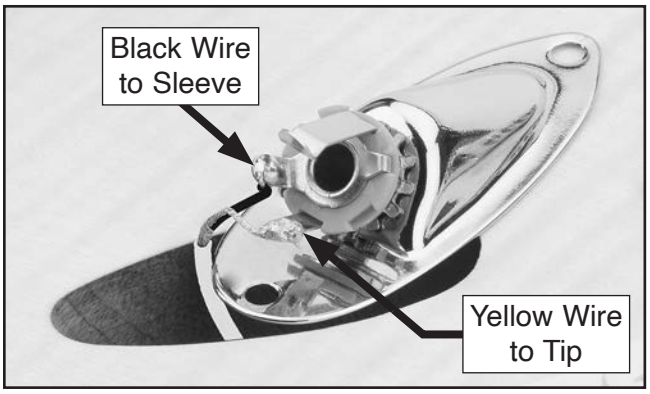


Figure 14. Wires soldered to output jack tabs.

2. Insert output jack assembly into cavity on guitar body and secure with masking tape.

3. Use a 3⁄32" drill bit to drill two 3⁄8" deep holes through holes in output jack.

4. Secure output jack to guitar body with (2) M2.5 x 8 tap screws (see **Figure 13**).

Installing Strap Buttons

The strap buttons are positioned on the guitar as shown in **Figure 15**.

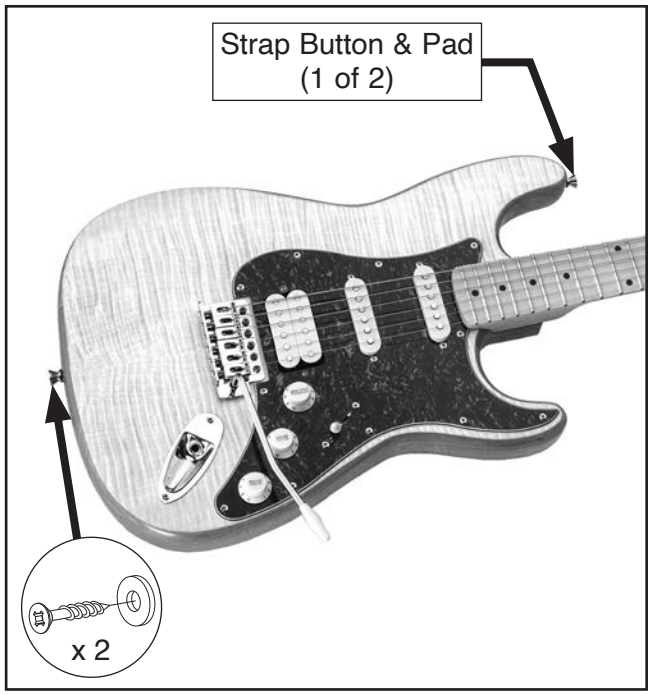


Figure 15. Strap button placement.

To install strap buttons:

1. Use a 3/32" drill bit to drill 1/2" deep holes at locations shown in **Figure 15**.

2. Attach strap buttons to guitar body (see **Figure 15**) using (2) M3 x 20 wood screws and (2) 4 x 10 x 1.5 pads.

Installing Back Plate

To simplify installing and removing the strings, the slots in the back plate must align with the string holes in the bottom of the tremolo bridge.

To install back plate:

1. Turn guitar face down, position back plate over cavity in back of guitar body, as shown in **Figure 16**.

   Note: *Make sure slots in back plate are centered over tremolo string holes.*

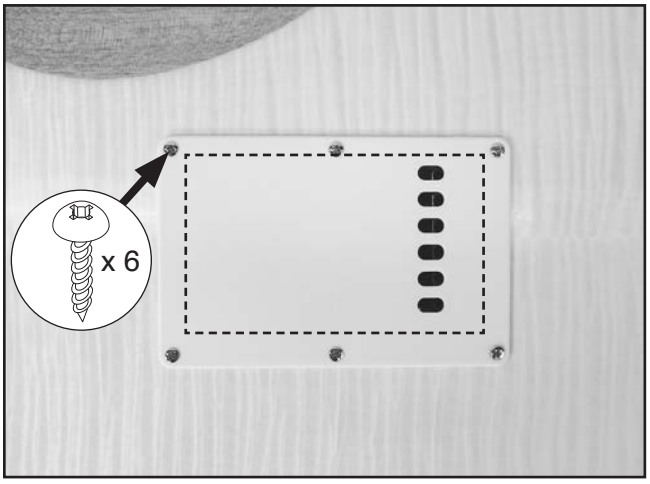


Figure 16. Correct position of back plate.

2. Secure position of back plate to guitar body with masking tape.

3. Use a 3/32" drill bit to drill 5/16" deep holes straight through six holes in back plate.

4. Remove protective plastic film from back plate.

5. Secure back plate to guitar body with (6) M2.5 x 8 tap screws, and remove masking tape (see **Figure 16**).

Installing Tuning Machines

The supplied tuning machines are easily installed. Each tuning machine consists of the parts shown in **Figure 17**.

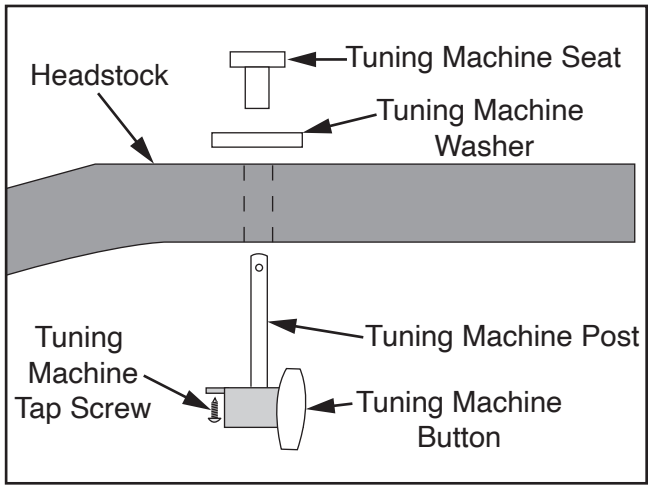


Figure 17. Tuning machine components.

To install tuning machines:

1. Using a non-marring mallet, tap each of (6) machine seats and washers into pre-drilled holes on front of headstock.

2. From back of headstock, slide posts through headstock and secure in seats (see **Figure 17**).

   Note: *Position tuning machine buttons away from headstock.*

3. Secure tuning machines to headstock with (6) M2.2 x 10 tap screws, as shown in **Figure 18**.

   Note: *Use a straightedge to make sure tuners are aligned. Adjust as necessary.*

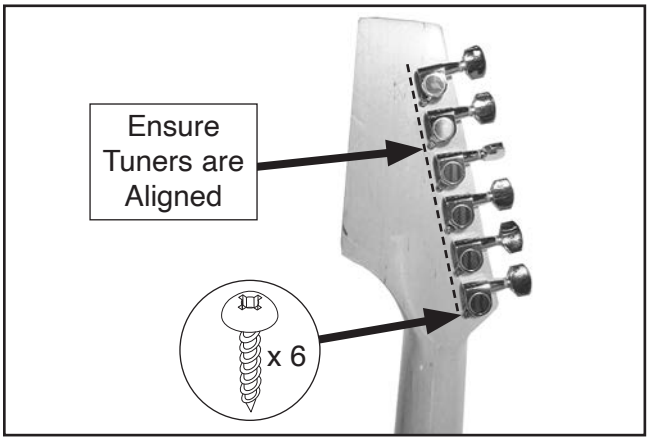


Figure 18. Tuning machines installed and aligned on headstock.

Installing Pick Guard

Now that the electronics components have been installed, the pick guard can be permanently installed.

To install pick guard:

1. Use a 3/32" drill bit to drill 5/16" deep holes through eleven holes in pick guard (see **Figure 24**).

2. Remove protective plastic film from pick guard.

3. Secure pick guard to guitar body with (11) M2.5 x 8 tap screws (see **Figure 24**).

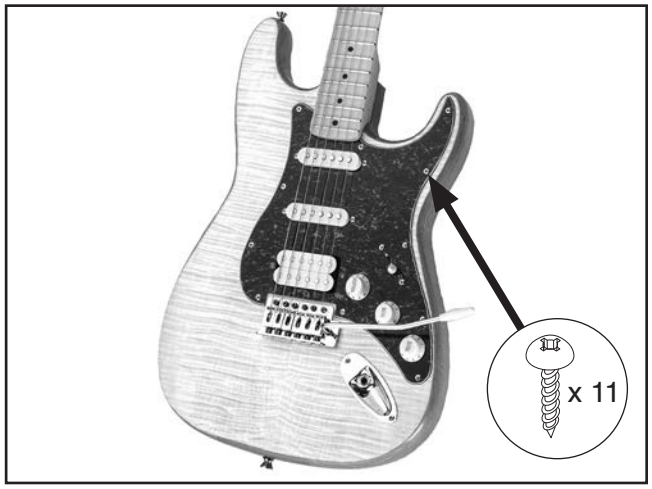


Figure 24. Pick guard installed on body.

4. Remove masking tape.

Installing String Retainers

The string retainers mount between the 1st and 2nd strings, and between the 3rd and 4th strings (see **Figure 25**). String retainers are designed to hold the strings down against the nut to enable correct tuning.

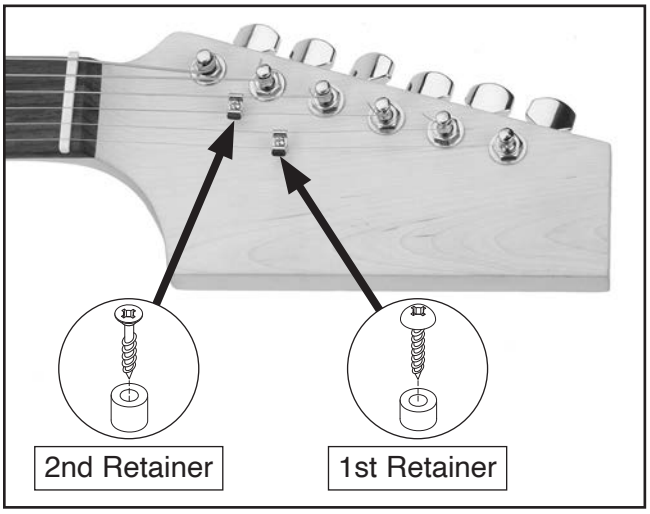


Figure 25. String retainer locations.

To install string retainers:

1. Place 1st string retainer on top of 1st and 2nd strings near second tuning machine and loosen strings several turns.

2. Use a 1/16" drill bit positioned through string retainer to drill a 1/4" deep hole into headstock.

   Caution: *Drilling hole deeper than 1/2" could result in drilling through bottom of headstock.*

3. Position 2.5 x 5 x 2.5 bushing under retainer and secure to headstock with M2.2 x 10 tap screw (see **Figure 25**).

4. Place 2nd string retainer on top of 3rd and 4th strings, loosen strings, and repeat **Step 2**.

5. Position 2.5 x 5 x 5 bushing under retainer and secure to headstock with M2.2 x 12 wood screw (see **Figure 25**).

5. Perform same tuning step on 3rd and 4th string.

6. When tuning 2nd string, fret 3rd string at 4th fret instead of 5th fret.

7. Tune 1st string in same manner as 6th, 5th, 4th, and 3rd strings.

Changing Intonation

Changing intonation adjusts the length of the string to correct for flatness/sharpness on each string. This is a simple process, but it does require some trial-and-error.

Tool Needed
Phillips Head Screwdriver #2 1

To change intonation:

1. Lightly touch and then release 1st string directly above twelfth fret as you pluck string to play a harmonic note.

2. Now pluck string while holding it fretted at twelfth fret. If this note is sharper than note played in **Step 1**, move saddle away from neck by turning saddle adjustment screw (see **Figure 31**) clockwise. If this note is flat in comparison, move saddle toward neck.

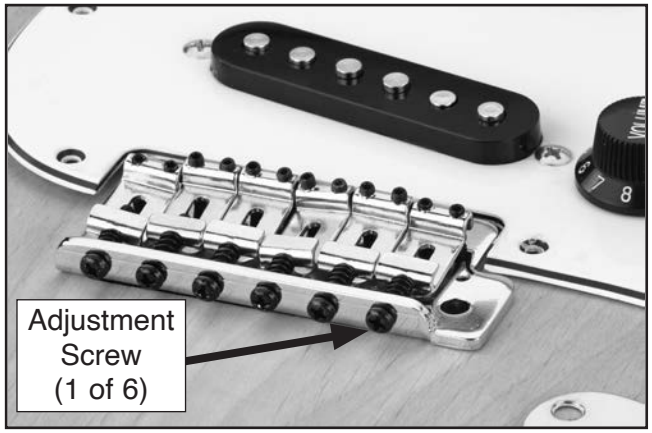


Figure 31. Example of saddle adjustment screw.

Note: *This can also be done with an electronic tuner by tuning harmonic note to be exactly in tune and then adjusting saddle until note played in **Step 2** is also in tune.*

3. Repeat **Steps 1–2** until string is in tune. Repeat process for remaining strings.

Adjusting Tremolo Springs

The pitch of the guitar can be changed by adjusting the tension on the tremolo springs.

Tool Needed
Phillips Head Screwdriver #2 1

To adjust tremolo springs:

1. If guitar cable is attached to amp, disconnect cable before proceeding.

2. Remove back plate.

3. Locate (2) M4 x 32 wood screws securing spring hanger (see **Figure 32**).

   — Tighten screws to increase pitch.

   — Loosen screws to decrease pitch.

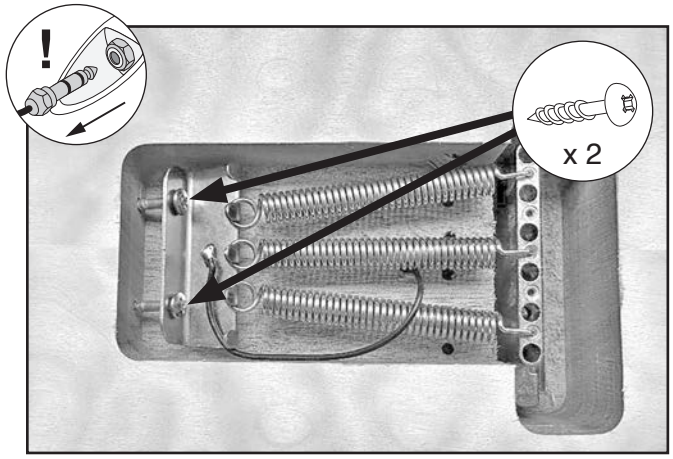


Figure 32. Location of tremolo springs.

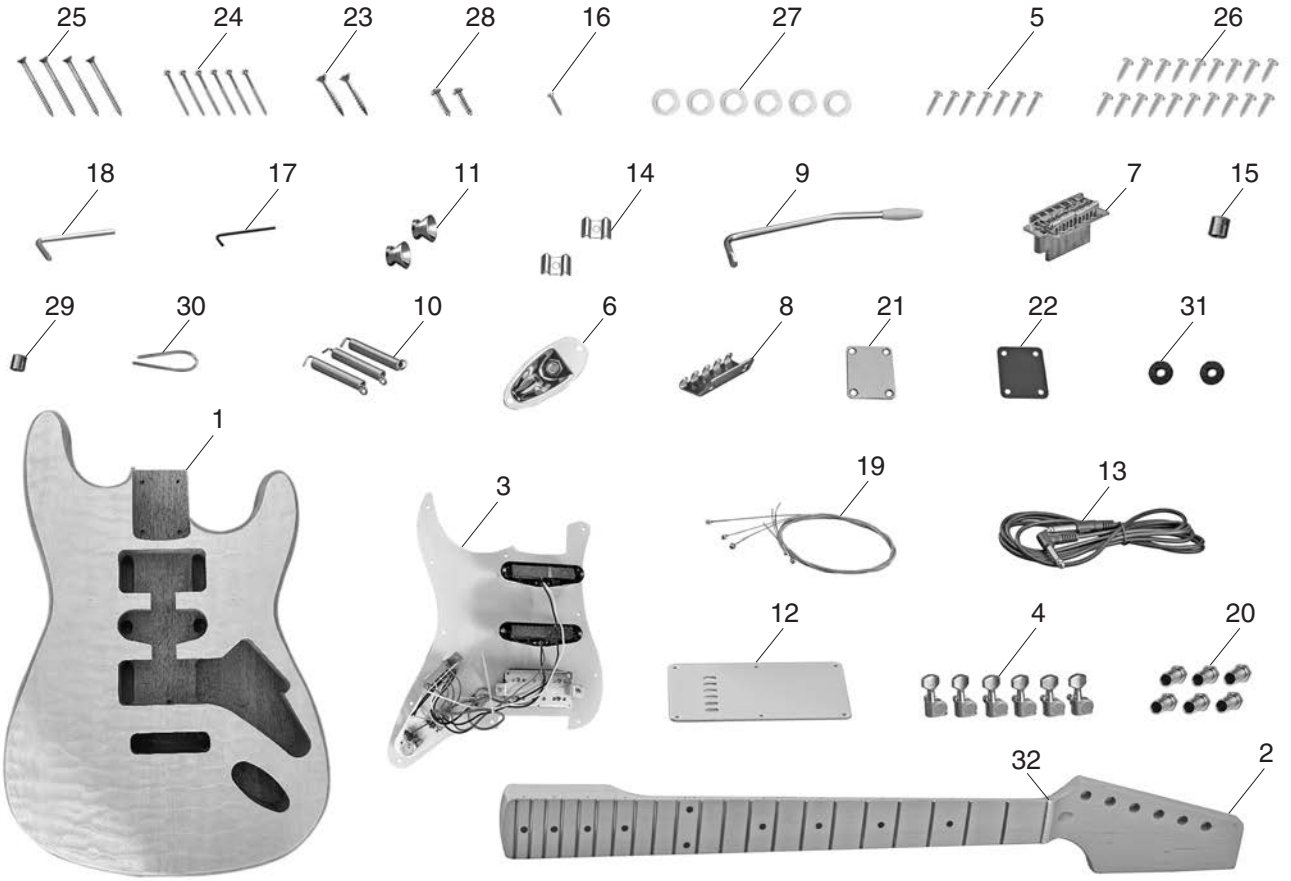
Note: *Standard position of spring hanger is approximately 5/8" from front edge of cavity.*

4. When satisfied with adjustment, replace back plate, and tune guitar.

SECTION 8: PARTS

We do our best to stock replacement parts when possible, but we cannot guarantee that all parts shown are available for purchase. Call **(800) 523-4777** or visit **www.grizzly.com/parts** to check for availability.

Main



REF	PART #	DESCRIPTION
1	PT33955001	BODY, QUILTED MAPLE (T33955)
1	PT33956001	BODY, FIDDLEBACK MAPLE (T33956)
2	PT33955002	NECK
3	PT33955003	PICK GUARD
4	PT33955004	TUNING MACHINE
5	PT33955005	TAP SCREW M2.2 X 10
6	PT33955006	OUTPUT JACK
7	PT33955007	TREMOLO BRIDGE
8	PT33955008	SPRING HANGER
9	PT33955009	TREMOLO ARM
10	PT33955010	TREMOLO SPRING
11	PT33955011	STRAP BUTTON
12	PT33955012	BACK PLATE
13	PT33955013	GUITAR CABLE
14	PT33955014	STRING RETAINER
15	PT33955015	BUSHING 2.5 X 5 X 5MM
16	PT33955016	WOOD SCREW M2.2 X 12

REF	PART #	DESCRIPTION
17	PT33955017	HEX WRENCH 1.5MM
18	PT33955018	HEX WRENCH 4MM
19	PT33955019	STRING SET
20	PT33955020	TUNING MACHINE SEAT
21	PT33955021	NECK PLATE GASKET
22	PT33955022	NECK PLATE
23	PT33955023	WOOD SCREW M4 X 32
24	PT33955024	WOOD SCREW M4 X 25
25	PT33955025	WOOD SCREW M5 X 40
26	PT33955026	TAP SCREW M2.5 X 8
27	PT33955027	TUNING MACHINE WASHER 8 X 14 X 1
28	PT33955028	WOOD SCREW M3 X 20
29	PT33955029	BUSHING 2.5 X 5 X 2.5MM
30	PT33955030	SOLDERING WIRE 60/40 ROSIN-CORE .062"
31	PT33955031	PAD 4 X 10 X 1.5MM
32	PT33955032	NUT

MODEL T33955/T33956
ELECTRIC GUITAR KIT
OWNER'S MANUAL
(For models manufactured since 09/23)

#JM22924 PRINTED IN CHINA V1.12.23

******Keep for Future Reference******

⚠ WARNING!

Some dust created by power sanding, sawing, grinding, drilling, and other construction activities contains chemicals known to the State of California to cause cancer, birth defects or other reproductive harm. Some examples of these chemicals are:

- **Lead from lead-based paints.**
- **Crystalline silica from bricks, cement and other masonry products.**
- **Arsenic and chromium from chemically-treated lumber.**

Your risk from these exposures varies, depending on how often you do this type of work. To reduce your exposure to these chemicals: Work in a well ventilated area, and work with approved safety equipment, such as those dust masks that are specially designed to filter out microscopic particles.

Table of Contents

INTRODUCTION

Contact Info

We stand behind our instruments! If you have questions or need help, contact us using the information below. Before contacting, make sure you gather all the information regarding your instrument. This will aid us in helping you faster.

Grizzly Technical Support
1815 W. Battlefield
Springfield, MO 65807
Phone: (570) 546-9663
Email: techsupport@grizzly.com

We want your feedback on this manual. What did you like about it? Where could it be improved? Please take a few minutes to give us feedback.

Address your concerns or recommendations to:

Grizzly Documentation Manager
P.O. Box 2069
Bellingham, WA 98227-2069
Email: manuals@grizzly.com

Description

The Grizzly electric guitar kits are made of solid mahogany and are available with two veneer options:

—T33955 Quilted Maple
—T33956 Fiddleback Maple

Manual Accuracy

We are proud to provide a high-quality owner's manual with your new instrument!

We make every effort to be exact with the instructions, specifications, drawings, and photographs in this manual. Sometime we make mistakes, and our policy of continuous improvement also means that **sometimes the instrument you receive is slightly different than shown in the manual.**

If you find this to be the case, and the difference between the manual and instrument leaves you in doubt, check our website (grizzly.com) for an updated version. We post current manuals and manual updates for free on our website.

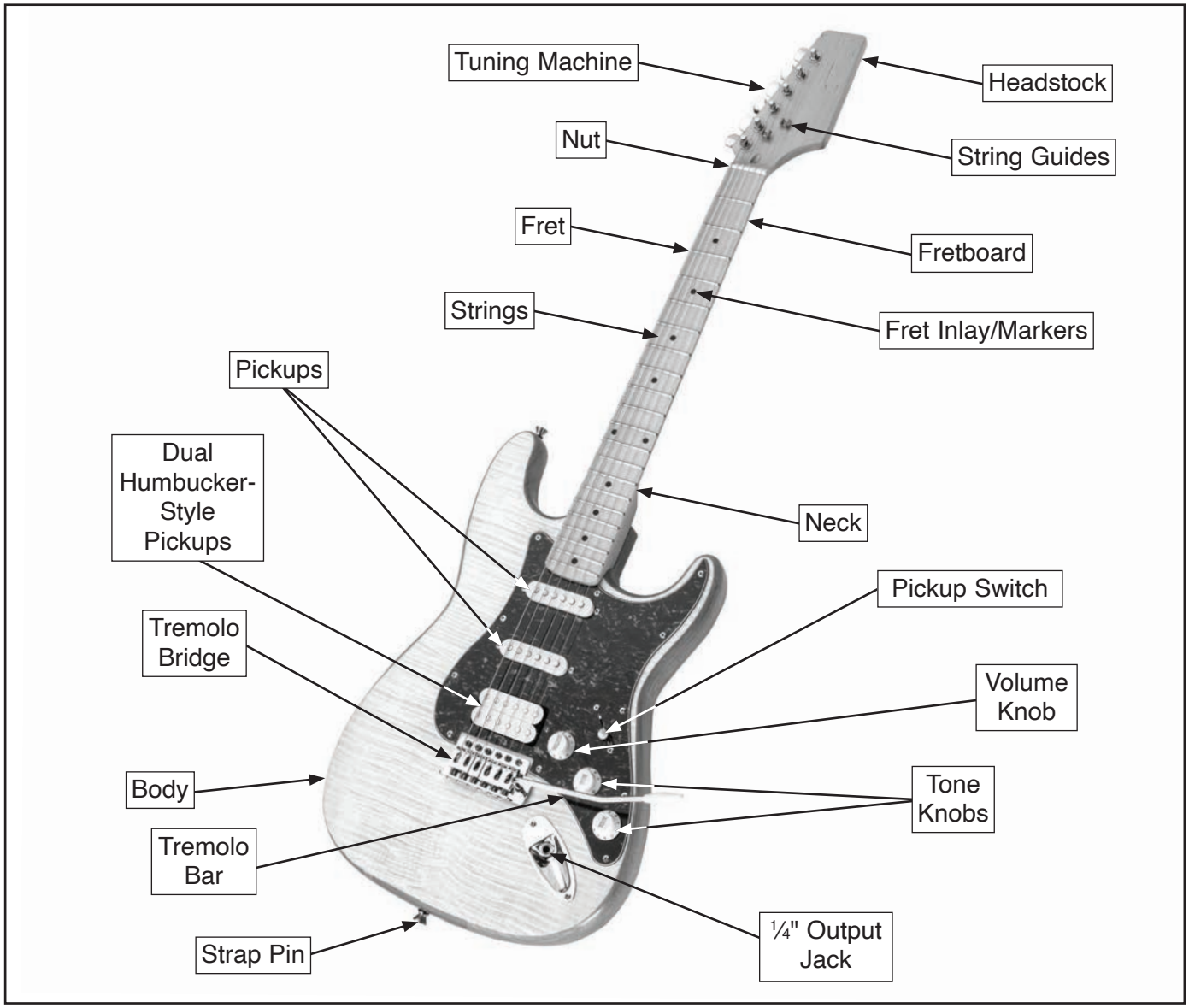
Alternatively, you can call our Technical Support for help. Before calling, gather all material and instructions that came with your instrument for easy reference. This will make providing you proper technical support much easier. It also will help us determine if updated documentation is available for your instrument.

NOTICE

WE STRONGLY RECOMMEND that you read books, review industry trade magazines, or get formal training before beginning any projects. Regardless of the contents in this Manual, Grizzly Industrial will not be held liable for accidents caused by lack of training.

Identification

Become familiar with the names and locations of the features shown below to better understand the instructions in this manual.



⚠WARNING

There is potential danger when operating woodworking machinery. Accidents are frequently caused by lack of familiarity or failure to pay attention. Use any machines with respect and caution to decrease the risk of operator injury. If normal safety precautions are overlooked or ignored, serious personal injury may occur.

⚠CAUTION

No list of safety guidelines can be complete. Every shop environment is different. Always consider safety first, as it applies to your individual working conditions. Use tools and any machinery with caution and respect. Failure to do so could result in serious personal injury, damage to equipment, or poor work results.

SECTION 1: SAFETY

⚠WARNING

Always wear safety glasses or goggles when operating equipment. Everyday glasses or reading glasses are not safety glasses. Be certain the safety glasses you wear meet the appropriate standards of the American National Standards Institute (ANSI).

Because there are various ways to cut and join wood, you can make substitutions for the methods stated in this plan. We try to suggest the easiest methods possible. However, only you know your skills with each piece of machinery. Never compromise your safety by using a cutting method with which you are not comfortable. Instead, find an alternative approach that will yield the same result.

⚠WARNING

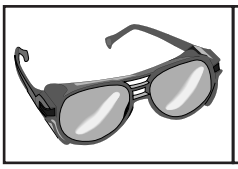
These instructions assume that you are intimately familiar with the safe operation and use of woodworking machinery and woodworking tools, and understand the techniques used to reproduce this project. If you do not qualify for both of these criteria, STOP building this project for your own safety. Read and understand the owner's manual for the machinery you intend to use, take a woodworking class or visit your local library for more information. Woodworking machinery and tools are inherently dangerous, because they use sharp edges that can and will cause serious personal injury including amputation and death. Do not underestimate the ability of these tools and machinery to cause injury. Never operate any tool without all guards in place and always wear approved safety glasses. For your own safety, please heed this warning.

SECTION 2: SETUP

Unpacking

This instrument was carefully packaged for safe transport. When unpacking, separate all enclosed items from packaging materials and inspect them for shipping damage. *If items are damaged, please call us immediately at (570) 546-9663.*

IMPORTANT: Save all packaging materials until your are completely satisfied with the instrument and have resolved any issues between Grizzly or the shipping agent. You must have the original packaging to file a freight claim. It is also extremely helpful if you need to return your instrument.



⚠WARNING
Wear safety glasses during the entire setup process!

Planning & Preparation

Total time building this instrument will vary on many factors. Variables such as glue manufacturer's instructions and curing time, temperature and humidity at the time of building, and your schedule are just a few of the factors that can affect the length of time spent on this project.

Perhaps the biggest determinant of time spent completing this instrument will be the type of finish and the finishing process used. Finishing this instrument can be as simple as applying a single coat of stain or lacquer that can be done relatively quickly, up to a multi-coated finish that takes weeks to harden.

Careful planning and budgeting ample time will make this project easier and ensure you end up pleased with your results. Good luck building your instrument, and Grizzly hopes it turns out looking, and sounding great.

Needed for Setup

The following items are needed, but not included, for the setup/assembly of this instrument.

Description	Qty
• Safety Glasses	1
• NIOSH-Approved Respirator	1
• Sanding Block	1
• Drill Press or Cordless Drill w/Depth Stop	1
• Drill Bit Set	1
• Phillips Screwdriver Set	1
• Pencil	1
• Sanding Block	1
• Hobby Knife or Razor Blade	1
• Wood File Set	1
• Soldering Iron and Solder	1
• T-Handle Reamer (⅛" to ⅝")	1
• Non-Marring Mallet	1
• Wire Cutters	1
• Needle Nose Pliers	1
• Feeler Gauge Set	1
• 18" Metal Straightedge (1/32" Resolution)	1
• Wood Glue	As Needed
• Super Glue	As Needed
• C-Clamps	As Needed
• Disposable Gloves	As Needed
• Sandpaper #180, #240, #320,	
• #800, #1000	As Needed
• Tack Cloth or Soft Cloth	As Needed
• Masking Tape or Painter's Tape	As Needed
• Finishing Supplies	As Needed
• Tack Cloth	As Needed
• Lint-Free Rags	As Needed
• Wooden Blocks	As Needed
• Wooden Shims	As Needed
• Wood File Set (Optional)	1

Inventory

The following is a list of items shipped with your instrument. Before beginning assembly, lay these items out and inventory them.

If any non-proprietary parts are missing (e.g. strings, or tuning machine screws), we will gladly replace them; or for the sake of expediency, replacements can be obtained at your local music shop.

NOTICE

If you cannot find an item on this list, carefully check around/inside the machine and packaging materials. Often, these items get lost in packaging materials while unpacking or they are pre-installed at the factory.

Body and Neck (**Figure 1**)	**Qty**
A. Body	1
B. Neck	1

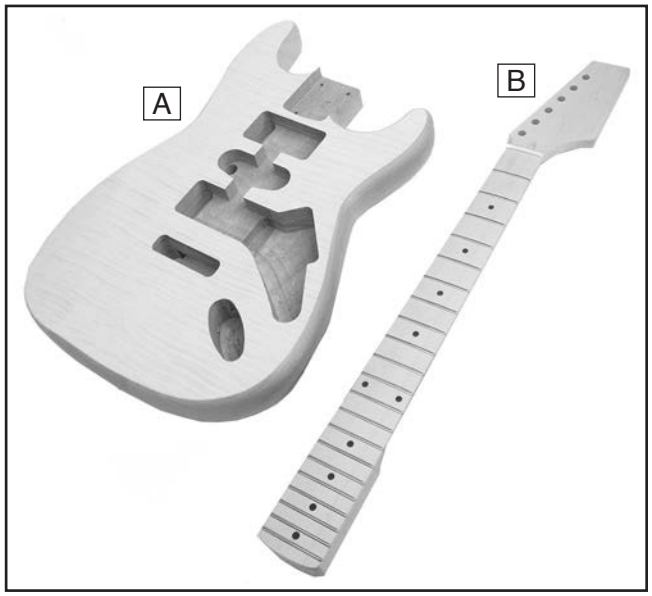


Figure 1. Body and neck.

Electrical Components (**Figure 2**)	**Qty**
C. Pick Guard	1
D. Output Jack	1
E. Guitar Cable	1
F. Tremolo Springs	3
G. Spring Hanger	1
H. Tremolo Bridge	1

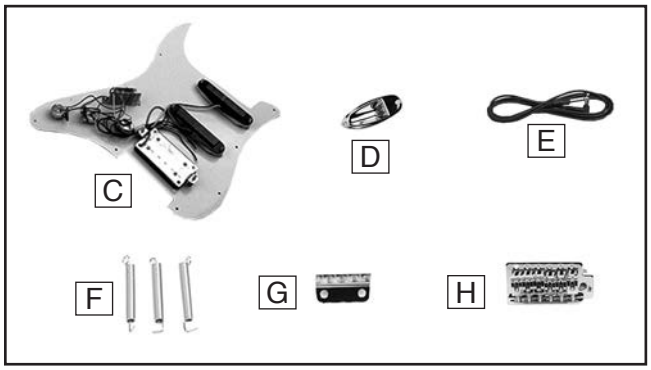


Figure 2. Electrical components.

Guitar Components (**Figure 3**)	**Qty**
I. Neck Plate	1
J. Neck Plate Gasket	1
K. Hex Wrenches 1.5, 4mm	1 Ea.
L. Back Plate	1
M. Tremolo Bar	1
N. Tuning Machines	6
O. Strap Buttons	2
P. String Set	1
Q. String Retainers	2
R. Bushings 4 x 5 x 3mm	2
S. Tuning Machine Seats	6
T. Tuning Machine Washers	6

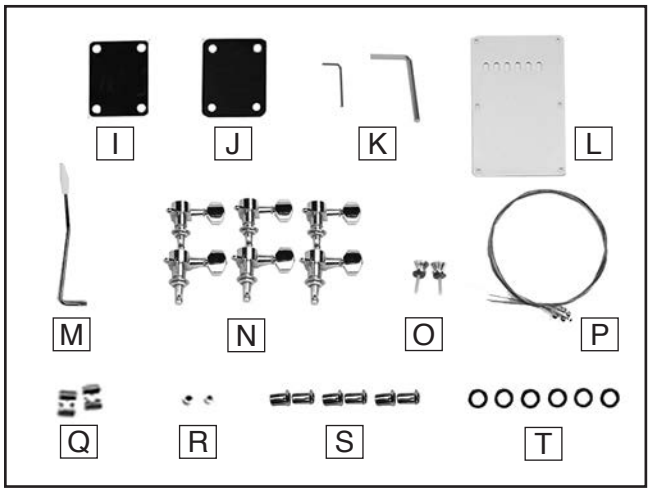


Figure 3. Guitar components.

Hardware (Not Shown):	
U. Phillips Head Screws M2 x 14	6
V. Phillips Head Screws M2.5 x 14	2
W. Phillips Head Screws M3 x 12	27
X. Phillips Head Screws M3.5 x 25	2
Y. Phillips Head Screws M3.5 x 30	6
Z. Phillips Head Screws M4 x 50	2
AA. Phillips Head Screws M5 x 45	4

SECTION 3: SANDING

Body

The guitar body was assembled and rough sanded at the factory; however, no finish has been applied. The joint cavity where the neck meets the body and the electronic component holes should NOT be sanded.

To sand body:

1. Sand body with #180-grit aluminum-oxide sandpaper until there is a consistent scratch pattern on entire surface.

   Note: *When hand sanding, always sand in same direction as wood grain.*

2. Repeat **Step 1** with #240-grit sandpaper.

3. Repeat **Step 1** with #320-grit sandpaper.

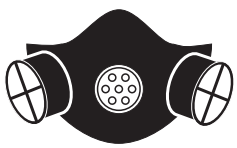
4. Wipe body with a damp, lint-free cloth. Wiping workpiece with a damp cloth before final sanding helps "raise" wood grain; thus allowing "raised" grain to be sanded smooth.

5. Resand entire body with #320 sandpaper to sand to "raised" grain smooth.

6. Wipe body with a tack cloth to remove all remaining sanding dust.

⚠WARNING

Damage to your eyes and lungs could result from dust created by sanding without proper protective gear. Always wear safety glasses and a NIOSH-approved respirator when sanding.



Neck

Like the guitar body, most of the guitar neck has been machined and rough sanded at the factory; however, the neck headstock can be customized to reflect personal taste. Additional cutting, inlay, or design work can give a guitar that personalized, custom look that makes it unique.

Note: *If you do choose to customize the neck area take your time with this sub-section and consider testing ideas on scrap wood before performing the work on the actual headstock.*

To sand neck:

1. Perform any custom cutting, inlay, or design work to headstock.

2. Using sanding technique described in previous sub-section, sand entire guitar neck.

   Note: *DO NOT sand fretboard. Sanding fretboard will affect playability of guitar and could lead to irreparable damage.*

Preparing to Finish

In preparation for applying the finish, cover the fretboard, neck pocket, and guitar body cavities with masking tape or painter's tape.

Carefully press all masking tape edges securely to the guitar pieces. Finish can seep under these edges, especially near corners and uneven edges, and where frets meet the fretboard.

Note: *Failure to properly mask these areas can result in irreparable damage to the guitar.*

Painting/Finishing

Finishing supplies are not supplied with the guitar kit.

There are many resources (books, videos, websites) that discuss guitar finishing. Grizzly recommends consulting these sources before finishing your instrument.

Listed below are a few general tips that can be helpful in finishing your instrument.

Painting/Finishing Tips:

- Always work in a well ventilated area when using finishing materials.
- Wear an ANSI-approved respirator mask and safety glasses when using finishing materials!
- Fabricate hooks from metal hangers to suspend guitar components during finishing process.
- Several thinner coats usually produce a nicer finish than one heavy coat.

Note: *Always follow finish manufacturer's instructions.*

- Dust particles suspended in air will settle on wet finishes, resulting in less than satisfactory results. To avoid this problem:

  1. Have guitar components positioned for finish application upon entering room.
  2. Leave room where finishing will take place completely undisturbed for 24 hours prior to applying finish.
  3. Avoid making unnecessary movements upon entering finish room.
  4. Apply finish to desired guitar parts and immediately leave finish room.
  5. DO NOT return to room until specified drying time has elapsed.

SECTION 4: ASSEMBLY

Routing Wires

Before proceeding with the assembly, three wires must be routed from the volume control potentiometer on the back of the pick guard to their proper places on the guitar body.

To route wires:

1. Lay pick guard face down on guitar body.

2. Push (1) black ground wire through hole that leads to rear cavity in back of guitar, as shown in **Figure 4**. This wire will be soldered to spring hanger in later step.

3. Push (1) black wire and (1) yellow wire through hole leading to output jack cavity shown in **Figure 4**. These will be soldered to output jack in later step.

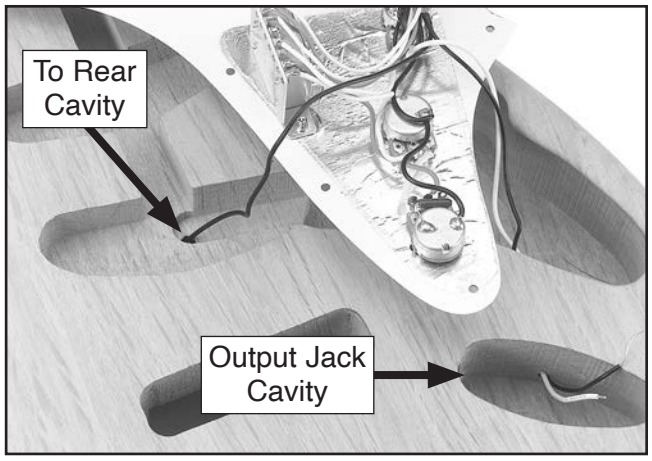


Figure 4. Wires correctly routed.

4. Place pick guard on guitar body as shown in **Figure 5**, and temporarily secure with masking tape. Attached pickups should fit into routed channels.

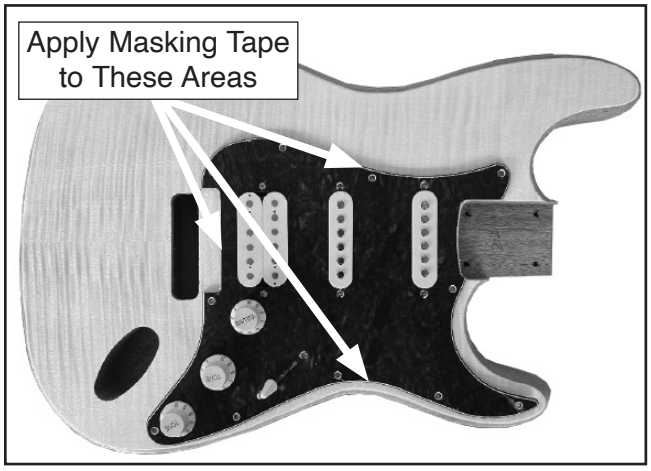


Figure 5. Pick guard placed on body.

5. DO NOT install screws at this time! Final adjustments will be made after installing strings.

Installing Neck

Unless otherwise indicated, we strongly recommend using a drill press for the majority of drilling to obtain the most precise results. However, an electric/cordless drill fitted with a depth stop or a drill stand can be used if you do not have a drill press.

We recommend using a hollow punch to carve out holes in the finish before drilling. Also, a router pad placed under the guitar can help reduce scratches on the finish.

To mount neck:

1. Insert neck into neck pocket (see **Figure 6**), and check to make sure neck and body are flush.

   — If there is a gap between neck and body, lightly sand high points on neck until it fits in pocket.

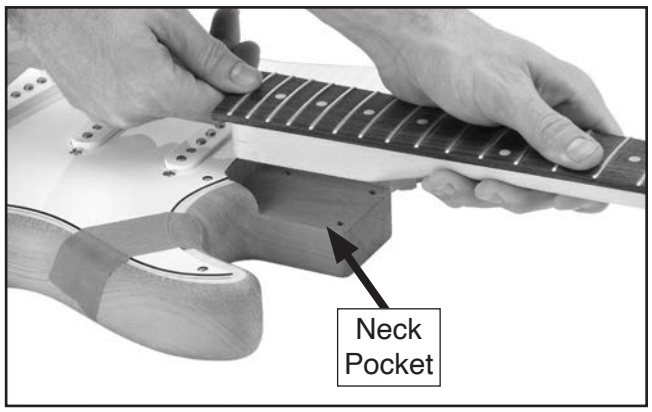


Figure 6. Example of mounting neck.

2. Using a C-clamp, press neck and body together.

3. Set guitar facedown on top of several 2x4's (cut to 6" or 12") for support.

4. Insert a 5⁄32" drill bit by hand into each predrilled neck hole (see **Figure 7**). While pressing down slightly, twist drill bit to make pilot holes in neck.

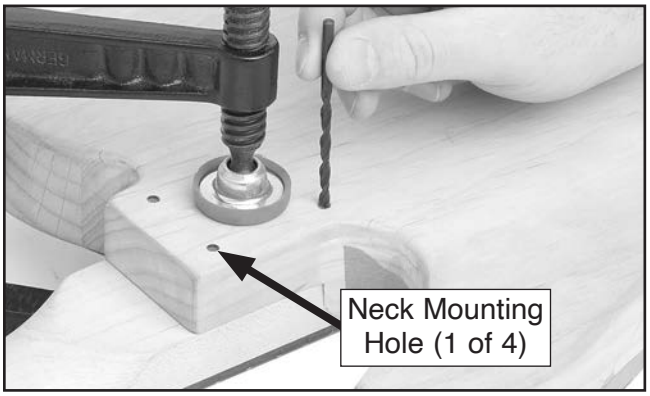


Figure 7. Making a pilot hole in neck.

5. Place neck plate and neck plate gasket on top of body so a mounting hole extends beyond body and neck (see **Figure 8**).

6. Insert (1) **M**5 x 45 Phillips head screw through plate and gasket (see **Figure 8**).

7. Gently mark screw tip depth on neck with a pencil (see **Figure 8**).

   Note: *You may want to cover screw tip marking location with masking tape to avoid scratching finish.*

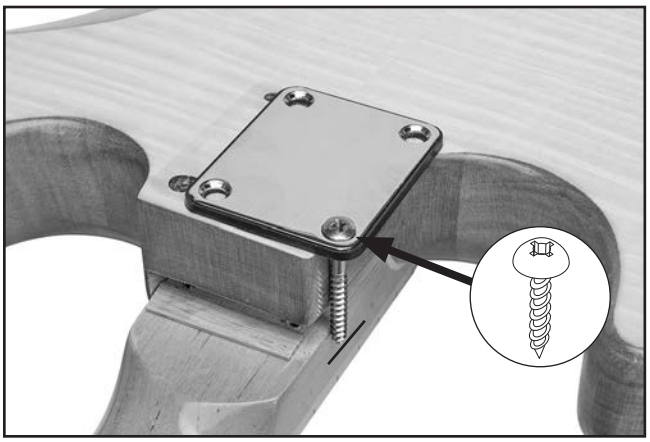


Figure 8. Depth of screw tip marked on neck.

8. Set neck face down on drill press table, lower bit to touch mark made in **Step 4**, then adjust drill press to stop at this mark.

9. Lower 5⁄32" drill bit over center of pilot holes and drill holes to correct depth.

10. Place neck plate on body.

    Note: *DO NOT glue neck to body.*

11. Align mounting holes in neck, body, neck plate, and neck plate gasket.

12. Secure neck with (4) M5 x 45 Phillips head screws (see **Figure 9**).

    Note: *Shims may need to be placed between neck and neck pocket to ensure proper height of fretboard upon installation if neck and fretboard are not even.*

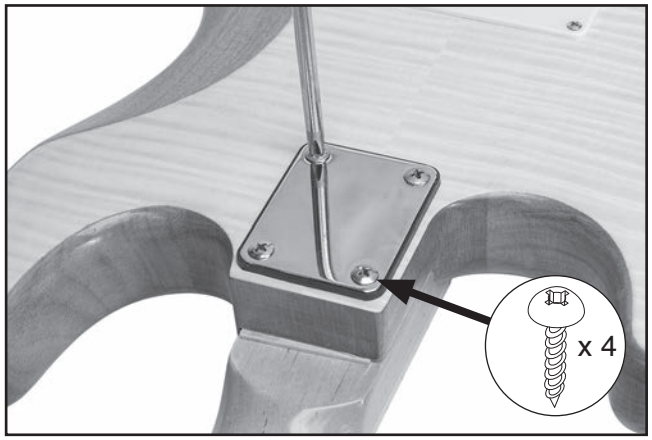


Figure 9. Mounting neck to body.

Installing Tremolo Bridge

The tremolo bridge is used to change the pitch of the strings on the guitar.

To attach tremolo bridge:

1. Place tremolo bridge in cut-out shown in **Figure 10.**

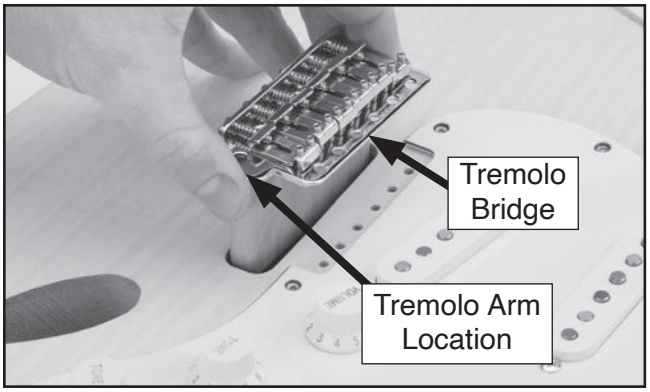


Figure 10. Example of tremolo bridge placement.

2. Test fit tremolo bridge and use a pencil to mark location of mounting holes.

3. Use 1⁄16" drill bit to pre-drill marked holes.

4. Secure tremolo bridge to guitar body with (6) M3.5 x 30 Phillips head screws.

5. Turn guitar body over and place spring hanger in cavity, as shown in **Figure 11**.

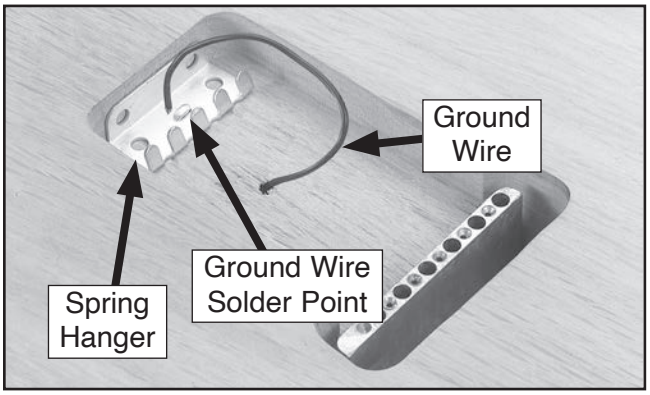


Figure 11. Spring hanger placement.

6. Secure spring hanger to guitar body with (2) M4 x 50 Phillips head screws, as shown in **Figure 12**. Tighten screws until spring hanger is 1" from wall of cavity.

7. Clean a spot on top of spring hanger to remove grease and dirt, then solder black ground wire from **Step 2** on **Page 9** to spring hanger, as shown in **Figure 12**.

8. Stretch three springs from spring hanger to tremolo bridge, as shown in **Figure 12**.

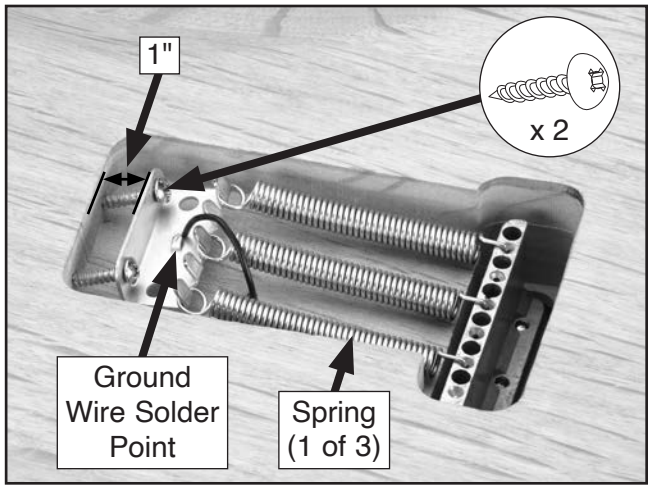


Figure 12. Springs and spring hanger installed, and ground wire soldered to hanger.

— If springs are too loose and will not grasp spring hanger, tighten screws to move hanger closer to body.

9. Turn guitar face up and ensure that tremelo bridge is sitting flat on face of guitar. Loosen or tighten screws until tremelo sits perfectly flat.

10. Screw tremolo arm into tremolo arm socket, as shown in **Figure 14.**

Installing Output Jack

The output jack transfers the signal from the guitar to the instrument cable and amplifier to produce sound.

To attach output jack:

1. Solder (1) black wire and (1) yellow wire from **Step 3** on **Page 9** to tabs on output jack, as shown in **Figure 13**.

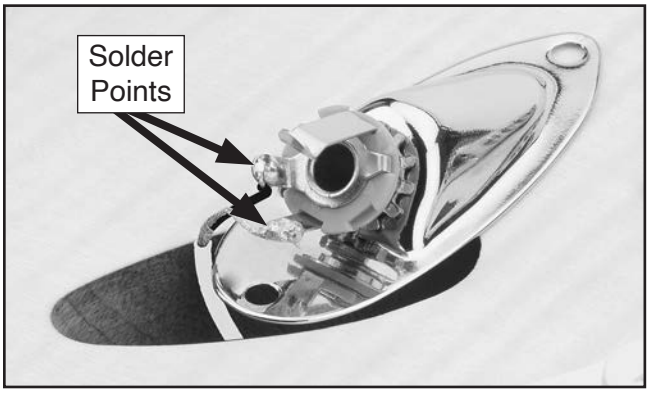


Figure 13. Wires soldered to output jack tabs.

2. Insert output jack assembly into cavity on guitar body and secure with masking tape.

3. Use a 3⁄32" drill bit to drill two 3⁄8" deep holes through holes in output jack.

4. Secure output jack to guitar body with (2) M3 x 12 Phillips head screws (see **Figure 14**).

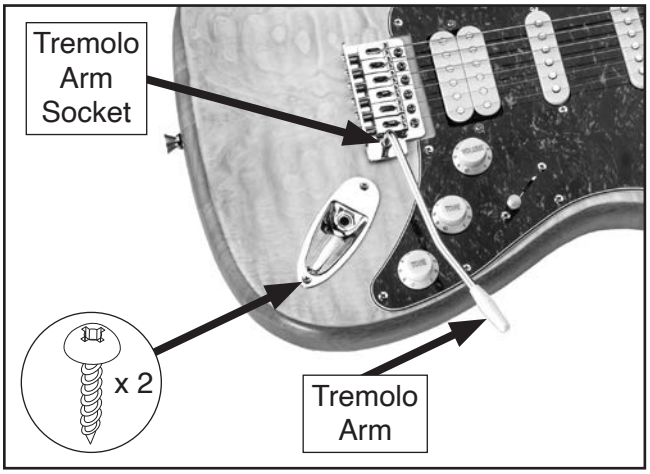


Figure 14. Output jack and tremolo arm installed.

Installing Strap Buttons

The strap buttons are positioned on the guitar, as shown in **Figure 15**.

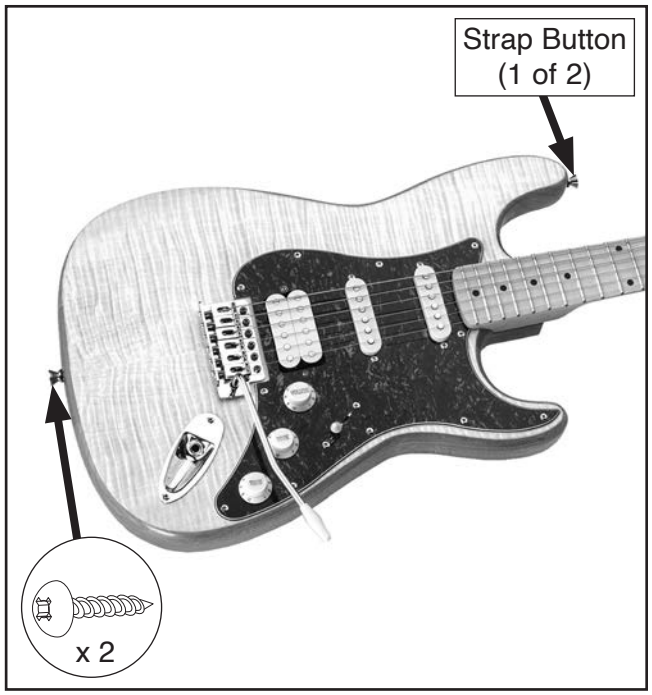


Figure 15. Strap button placement.

To install strap buttons:

1. Use a 3/32" drill bit to drill 1/2" deep holes at locations shown in **Figure 15**.

2. Use (2) Phillips head screws provided with strap buttons to secure each button to guitar body (see **Figure 15**).

Installing Back Plate

To simplify installing and removing the strings, the slots in the back plate must align with the string holes in the bottom of the tremolo bridge.

To install back plate:

1. Turn guitar face down, position back plate over cavity in back of guitar body, as shown in **Figure 16**.

   Note: *Make sure slots in back plate are centered over tremolo string holes.*

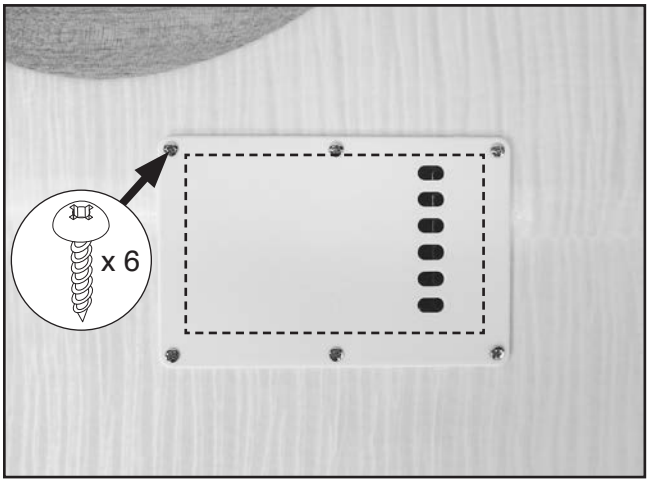


Figure 16. Correct position of back plate.

2. Secure position of back plate to guitar body with masking tape.

3. Use a 3/32" drill bit to drill 5/16" deep holes straight through six holes in back plate.

4. Remove protective plastic film from back plate.

5. Secure back plate to guitar body with (6) M3 x 12 Phillips head screws, and remove masking tape (see **Figure 16**).

Installing Tuning Machines

The supplied tuning machines are easily installed. Each tuning machine consists of the parts shown in **Figure 17**.

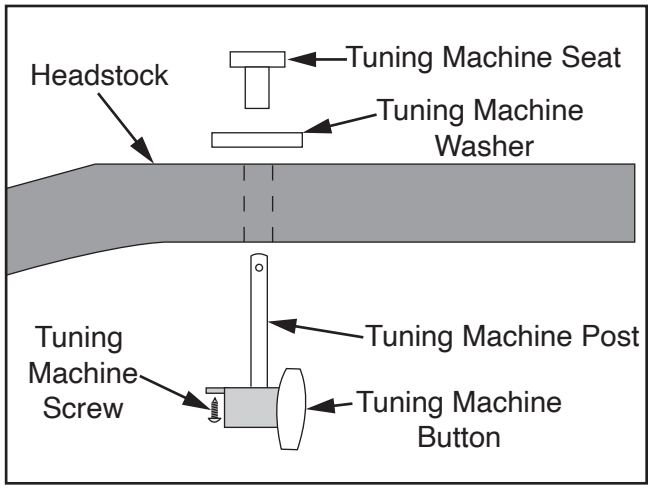


Figure 17. Tuning machine components.

To install tuning machines:

1. Using a non-marring mallet, tap each of (6) machine seats and washers into pre-drilled holes on front of headstock.

2. From back of headstock, slide posts through headstock and secure in seats (see **Figure 17**).

   Note: *Position tuning machine buttons away from headstock.*

3. Secure tuning machines to headstock with screws, as shown in **Figure 18**.

   Note: *Use a straightedge to make sure tuners are aligned. Adjust if necessary.*

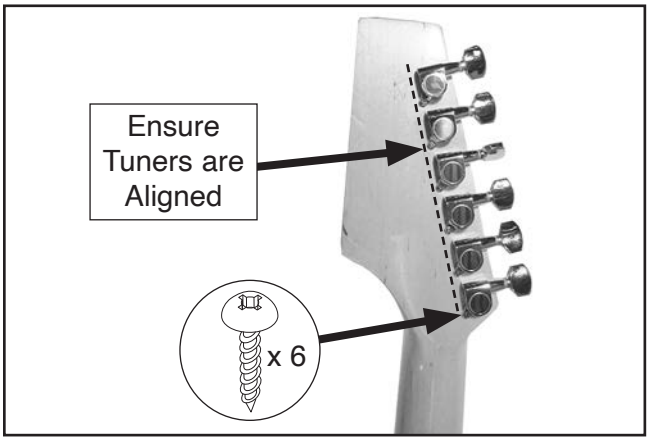


Figure 18. Tuning machines installed and aligned on headstock.

Installing Nut

The nut is located at the top of the fretboard and holds the strings in place. The nut can be held in place with string tension, or it can be spot glued in place for more security.

If you prefer to glue, we recommend using wood glue so that future adjustments can be made. For a more permanent bond, super glue can be used, but future adjustments will be more difficult.

NOTICE

ALWAYS follow the adhesive manufacturer's instructions for your safety and best results.

To install nut:

1. Use a hobby knife or razor blade to scrape any finish out of nut slot (see **Figure 19**). DO NOT remove any wood from nut slot.

   Note: *Curved part of nut should face headstock.*

2. Test fit nut in slot, ensuring large grooves face toward top of neck, as shown in **Figure 19**.

   — If nut fits snugly in slot, proceed to **Step 3**.

   — If nut does not fit in slot, sand one side on a piece of sandpaper until it fits snugly in slot.

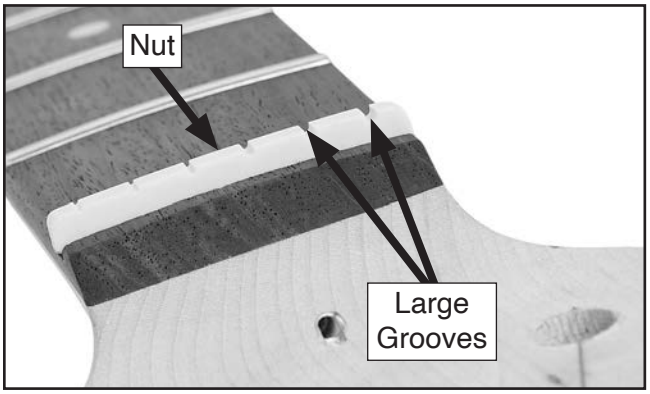


Figure 19. Nut installed.

3. Remove nut, spread a thin layer of glue in nut slot, and install nut in slot, ensuring it is centered from side to side.

4. Clamp nut in place.

5. Wipe away excess glue with a damp cloth, and allow glue to dry for 24 hours.

Installing Strings

The correct position of the guitar strings is shown in **Figure 20**. The thin High "E" string is the "1st" string, and the thick Low "E" string is the "6th."

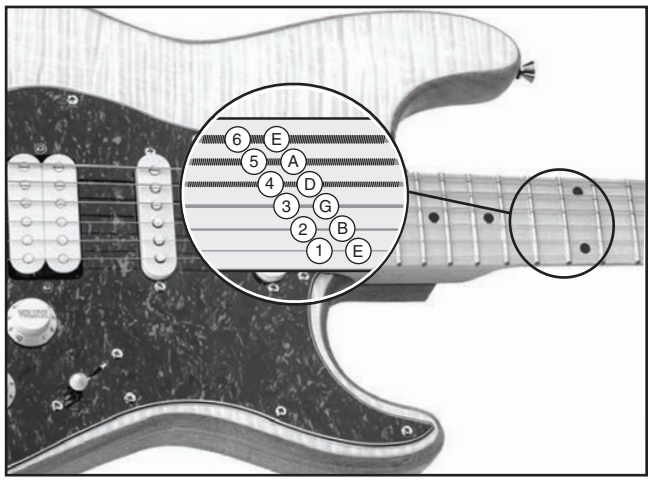


Figure 20. Correct string locations.

To install strings:

1. Slide 1st string through corresponding hole in tremolo bridge (see **Figure 21**).

2. Guide string through tremolo bridge, across saddle (see **Figure 21**), over nut, and through hole in corresponding tuning machine (see **Figure 22**).

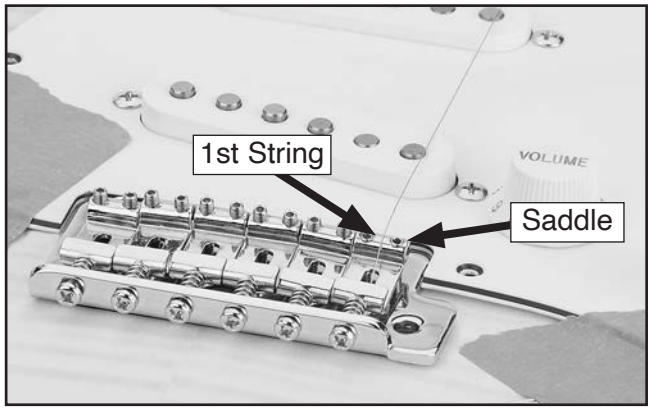


Figure 21. Example of 1st string installed.

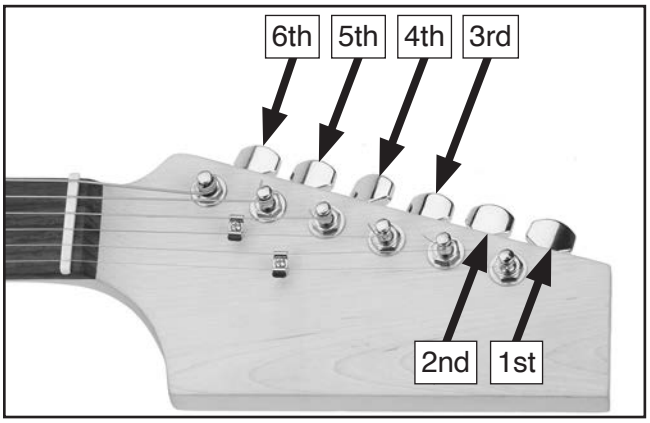


Figure 22. String installed in tuning machines.

3. Allow only enough slack in string for 2–3 rotations around tuning machine post.

   Note: *If too much slack is allowed, then string could wind off tuning machine post after many successive rotations. If not enough slack is allowed, then string may not hold winding tension.*

4. Bend string at a right angle across edge of tuning machine post.

5. Rotate tuning machine until string just begins to hold winding tension (see **Figure 23**), and so string is on right side of tuning machine post.

   Note: *DO NOT tighten strings beyond initial tensioning at this time. Final tensioning will be completed during string tuning process.*

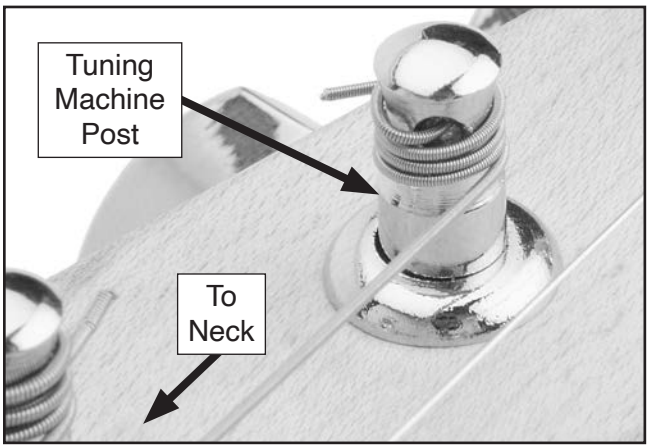


Figure 23. String wrapped around tuning machine post.

6. Use wire cutters to cut off excess string.

7. Repeat above process for remaining strings.

Installing Pick Guard

Now that the electronics components have been installed, the pick guard can be permanently installed.

To install pick guard:

1. Use a 3⁄32" drill bit to drill 5⁄16" deep holes through eleven holes in pick guard (see **Figure 24**).

2. Remove protective plastic film from pick guard.

3. Secure pick guard to guitar body with (19) M3 x 12 Phillips head screws (see **Figure 24**).

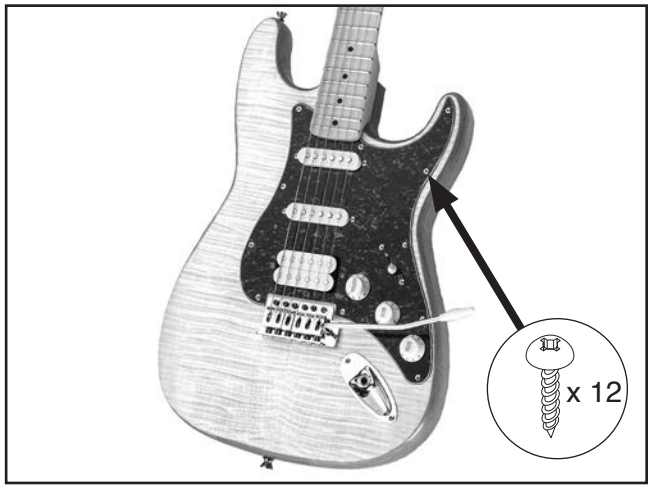


Figure 24. Pick guard installed on body.

4. Remove masking tape.

Installing String Retainers

The string retainers mount between the 1st and 2nd strings, and between the 3rd and 4th strings (see **Figure 25**). String retainers are designed to hold the strings down against the nut to enable correct tuning.

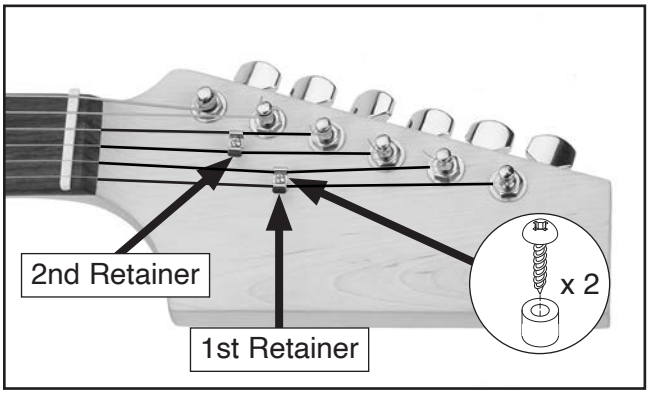


Figure 25. String retainer locations.

To install string retainers:

1. Place 1st string retainer on top of 1st and 2nd strings near second tuner and loosen strings several turns.

2. Using a 1⁄16" drill bit positioned through string retainer, drill a 1⁄4" deep hole into headstock.

   Note: *Drilling hole deeper than 1⁄2" could result in drilling through bottom of headstock.*

3. Slide screw provided with retainer through retainer and bushing, then fasten it to headstock (see **Figure 25**).

4. Place 2nd string retainer on top of 3rd and 4th strings, loosen strings, and repeat **Steps 2–3**.

SECTION 5: FINAL ADJUSTMENTS

General

Guitar setup is an art that requires skill, patience, and experience. If you have the patience, you can acquire the skill and experience. If you don't have the patience, you may want to have your guitar set up by a qualified guitar technician.

This section presents an overview of setup practices. We highly recommended that you research more in-depth methods. Books on setting up electric guitars can be ordered through Grizzly Industrial, luthier supply catalogs, or may be available through your local library.

Adjusting Neck

The guitar neck was adjusted perfectly straight before it was packaged. However, the moisture content of wood acclimates to the humidity of the surrounding environment, and this can result in wood movement that affects alignment. The neck may require adjustment several times a year, particularly in regions where the seasonal climate changes are more drastic.

Tools Needed

Hex Wrench 4mm 1
Straightedge 1
Feeler Gauge 1

To adjust neck:

1. DISCONNECT GUITAR FROM AMP!

2. Tighten strings to playing tension.

3. Place a straightedge on fretboard, stretching from 1st fret to 17th. Measure any gaps between straightedge and frets with feeler gauge.

— If neck is bowed *less than* 0.012", no adjustment is necessary. Proceed to **Adjusting String Height** on **Page 19**.

— If neck is bowed *more than* 0.012", proceed to **Step 4**.

4. Loosen strings so there is no tension on neck.

5. Locate truss rod nut at bottom of headstock (see **Figure 26**) and turn counterclockwise to release tension on neck. Now tighten nut until it just begins to grab.

— To flatten a *down* bow, turn truss rod nut a ¼ turn clockwise. To correct an *up* bow, turn nut a ¼ turn counterclockwise.

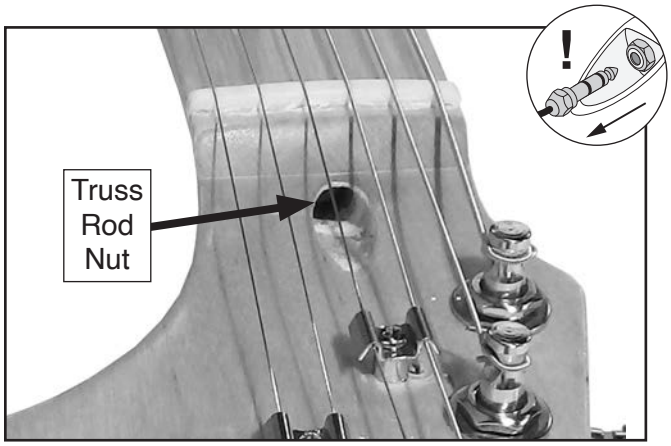


Figure 26. Location of truss rod nut.

6. Tighten strings to playing tension, and check neck with straightedge.

— If neck is correctly adjusted, go to **Adjusting String Height** on **Page 19**.

— If neck is still out of adjustment, repeat **Steps 4–5**.

Adjusting String Height

Correct string height (or action) is crucial for maximizing the playability of your electric guitar. The string height is the distance between the top face of the fret and the bottom face of the string (see **Figure 27**). The ideal string height typically falls within a range of 0.060"–0.080" measured at the 12th fret.

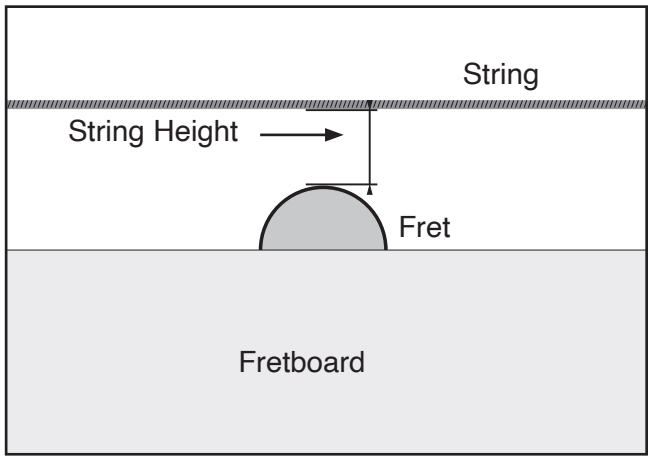


Figure 27. String height measurement.

Tool Needed

Hex Wrench 1.5mm 1

To adjust string height:

1. DISCONNECT GUITAR FROM AMP!
2. Measure height of each string above 12th fret.
3. Adjust saddle height (see **Figure 28**) for each string until it is 0.060"–0.080" above 12th fret.

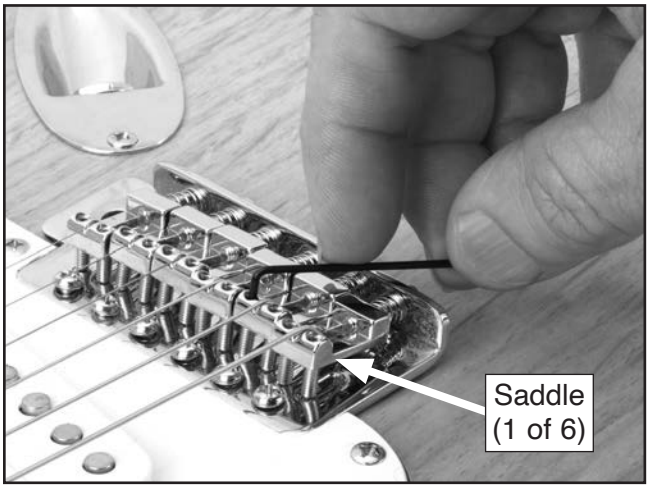


Figure 28. Example of adjusting string height.

4. Tune guitar if necessary.

Adjusting Pickup Height

Pickup height can have a dramatic effect on the audio output signal. The closer the strings are to the pickup, the higher the audio output signal will be. If the strings are too close, distortion is caused by magnetic interference from the electronic components.

Tool Needed
Phillips Head Screwdriver #2 1

To adjust pickup height:

1. Measure height of 1st and 6th strings at pickup while strings are "fretted" at 22nd fret (see **Figure 29**).

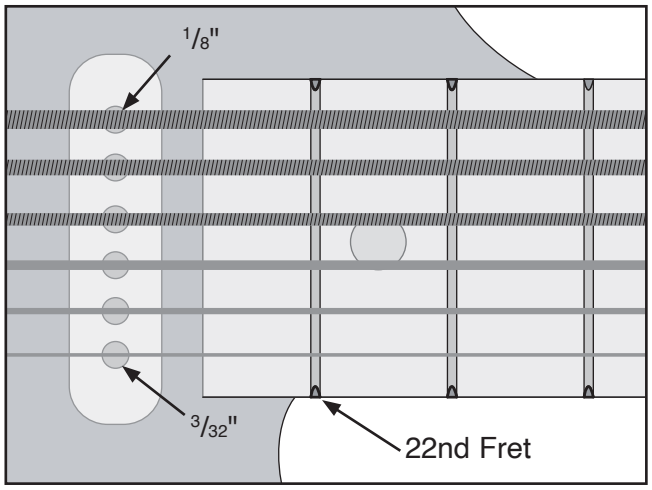


Figure 29. String heights over pickup.

2. Adjust screws on each side of pickup until 1st string is 3/32" above pickup and 6th string is 1/8" above pickup.

   — Turn screws clockwise to raise height of pickup.

   — Turn screws counterclockwise to lower height of pickup.

3. Repeat **Steps 1–2** for other pickups.

Tuning

Tuning is the most important concept of playing a guitar. If the guitar is not in tune with itself, or the other instruments in an ensemble, the resulting music will not sound pleasing to the ear.

The easiest way to tune a guitar is using an electronic tuner. There are a wide variety of these available in music stores and online.

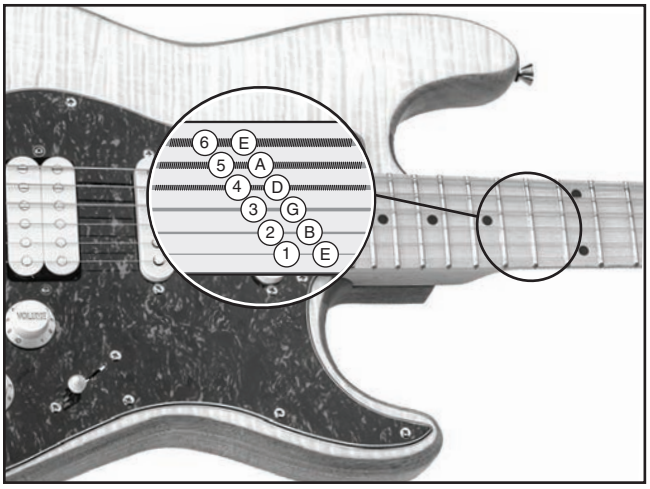


Figure 30. Example of standard tuning.

To tune guitar:

1. Play a low E Pitch on a piano, a tuning fork, or an electronic computer file.

2. Play an open (non-fretted) 6th string and adjust tuner to match low E.

   Note: *Always tune up. If string is tuned high, loosen string to lower pitch, then tune string up to correct note.*

3. Tune 5th string by playing 6th string while it is being pressed (fretted) at 5th fret, and then play open 5th string. Adjust 5th string tuner until notes match.

4. Tune 4th string by playing 5th string while it is being pressed (fretted) at 5th fret, and then play open 4th string. Adjust 4th string tuner until notes match.

5. Perform same tuning step on 3rd and 4th string.

6. When tuning 2nd string, fret 3rd string at 4th fret instead of 5th fret.

7. Tune 1st string in same manner as 6th, 5th, 4th, and 3rd strings.

Changing Intonation

Changing intonation adjusts the length of the string to correct for flatness/sharpness on each string. This is a simple process, but it does require some trial-and-error.

Tool Needed
Phillips Head Screwdriver #2 1

To change intonation:

1. Lightly touch and then release 1st string directly above twelfth fret as you pluck string to play a harmonic note.

2. Now pluck string while holding it fretted at twelfth fret. If this note is sharper than note played in **Step 1**, move saddle away from neck by turning saddle adjustment screw (see **Figure 31**) clockwise. If this note is flat in comparison, move saddle toward neck.

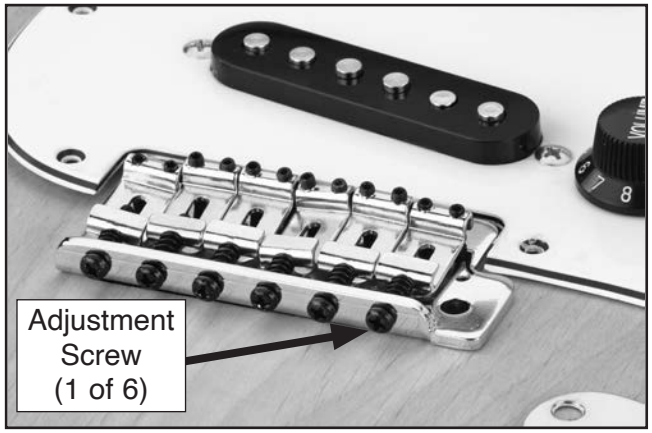


Figure 31. Example of saddle adjustment screw.

Note: *This can also be done with an electronic tuner by tuning harmonic note to be exactly in tune and then adjusting saddle until note played in **Step 2** is also in tune.*

3. Repeat **Steps 1–2** until string is in tune. Repeat process for remaining strings.

Adjusting Tremolo Springs

The pitch of the guitar can be changed by adjusting the tension on the tremelo springs.

Tool Needed
Phillips Head Screwdriver #2 1

To adjust tremolo springs:

1. DISCONNECT GUITAR FROM AMP!

2. Remove back plate.

3. Locate (2) Phillips head screws securing spring hanger (see **Figure 32**).

   — Tighten screws to increase pitch.

   — Loosen screws to decrease pitch.

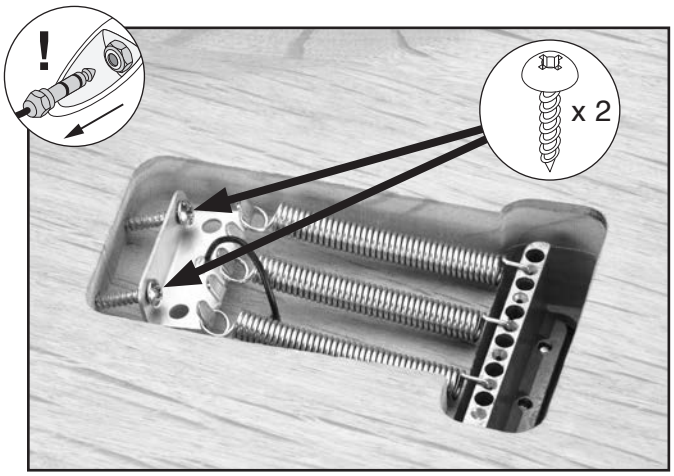


Figure 32. Location of tremelo springs.

Note: *Standard position of spring hanger is approximately 5/8" from front edge of cavity.*

4. When satisfied with adjustment, replace back plate, and tune guitar.

SECTION 6: ACCESSORIES

NOTICE

Refer to our website or latest catalog for additional recommended accessories.

T1233—High Speed Soldering Gun Kit
Designed for professional users, this fast-heating, pistol grip soldering gun is comfortable and easy to use. This soldering gun features a comfortable pistol grip and is designed for quick tip replacement. It also includes a built-in light to better illuminate your workpiece.

Figure 33. T1233 High Speed Soldering Gun Kit.

H5962—Guitar Stand-Electric/Archtop
A stable guitar stand that keeps electric and archtop guitars safe yet accessible on stage or on display. Folds up for easy transporting. Three adjustable locking positions. Padded protection at all contact points and non-slip rubber feet.

Figure 34. H5962 Guitar Stand-Electric/Archtop.

D2823—Shop Fox Sanding Block - Small
This beautiful hardwood sanding block features a felt pad, ergonomically shaped body and convenient sandpaper attachment and removal. Top-mounted knurled brass knob mechanism secures sandpaper so there's no slipping or tearing. Small block measures 3" x 4" and uses one sixth sanding sheet.

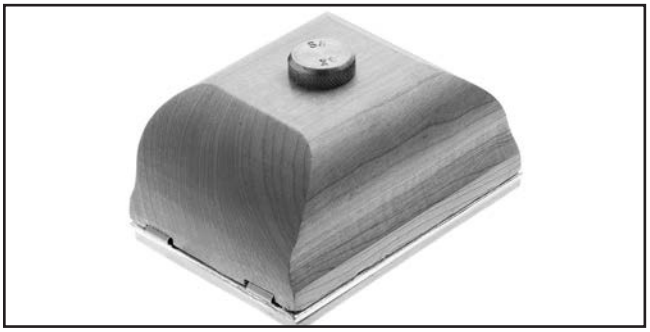


Figure 35. D2823 Shop Fox Sanding Block - Small.

G9616—Feeler Gauge Set - 32 Pc.
This 3½" long Feeler Gauge Set provides a quick and accurate method of determining gap widths. Includes: .0015", .002", .0025", .003", .004", .005", .006", .007", .008", .009, .010", .010", .011", .012", .013", .014", .015", .016", .017", .018", .019", .020", .021", .022", .023", .024", .025", .026", .028", .030", .032" and .035" blade thickness. Case not included.

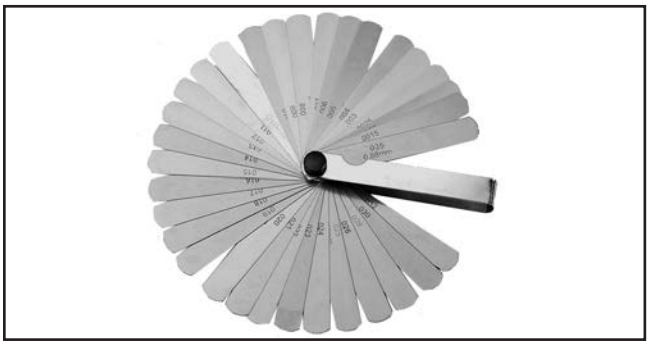


Figure 36. G9616 Feeler Gauge Set - 32 Pc.

SECTION 7: WIRING

These pages are current at the time of printing. However, in the spirit of improvement, we may make changes to the electrical systems of future machines. Compare the manufacture date of your machine to the one stated in this manual, and study this section carefully.

If there are differences between your machine and what is shown in this section, call Technical Support at (570) 546-9663 for assistance BEFORE making any changes to the wiring on your machine. An updated wiring diagram may be available. **Note:** *Please gather the serial number and manufacture date of your machine before calling. This information can be found on the main machine label.*

⚠WARNING
Wiring Safety Instructions

SHOCK HAZARD. Working on wiring that is connected to a power source is extremely dangerous. Touching electrified parts will result in personal injury including but not limited to severe burns, electrocution, or death. Disconnect the power from the machine before servicing electrical components!

MODIFICATIONS. Modifying the wiring beyond what is shown in the diagram may lead to unpredictable results, including serious injury or fire. This includes the installation of unapproved aftermarket parts.

WIRE CONNECTIONS. All connections must be tight to prevent wires from loosening during machine operation. Double-check all wires disconnected or connected during any wiring task to ensure tight connections.

CIRCUIT REQUIREMENTS. You MUST follow the requirements at the beginning of this manual when connecting your machine to a power source.

WIRE/COMPONENT DAMAGE. Damaged wires or components increase the risk of serious personal injury, fire, or machine damage. If you notice that any wires or components are damaged while performing a wiring task, replace those wires or components.

MOTOR WIRING. The motor wiring shown in these diagrams is current at the time of printing but may not match your machine. If you find this to be the case, use the wiring diagram inside the motor junction box.

CAPACITORS/INVERTERS. Some capacitors and power inverters store an electrical charge for up to 10 minutes after being disconnected from the power source. To reduce the risk of being shocked, wait at least this long before working on capacitors.

EXPERIENCING DIFFICULTIES. If you are experiencing difficulties understanding the information included in this section, contact our Technical Support at (570) 546-9663.

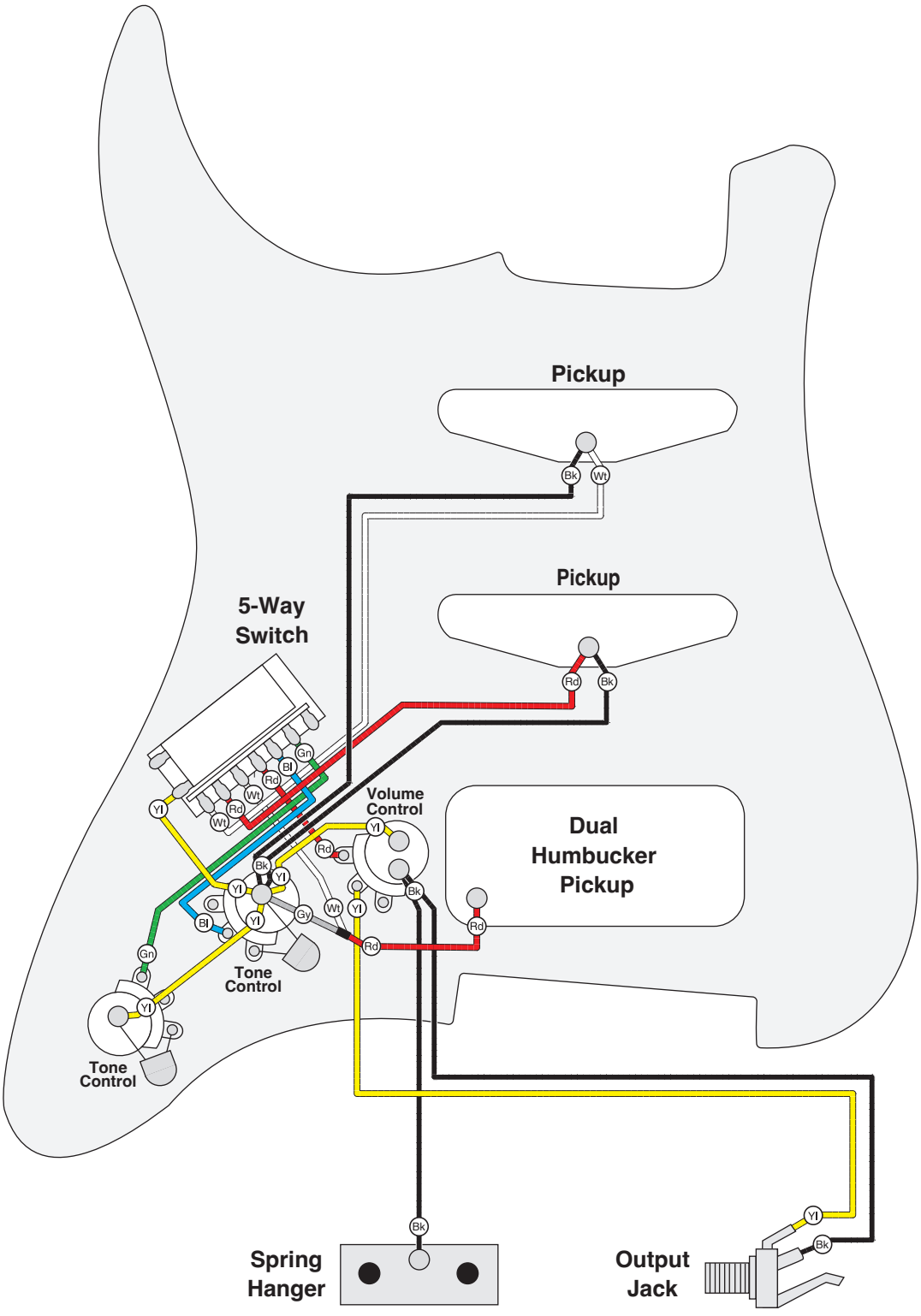
NOTICE

The photos and diagrams included in this section are best viewed in color. You can view these pages in color at www.grizzly.com.

COLOR KEY

BLACK	Bk	BLUE	Bl	YELLOW	Yl	LIGHT BLUE	Lb
WHITE	Wt	BROWN	Br	YELLOW GREEN	Yg	BLUE WHITE	Bw
GREEN	Gn	GRAY	Gy	PURPLE	Pu	TURQUOISE	Tu
RED	Rd	ORANGE	Or	PINK	Pk		

Wiring Diagram



STOP *READ ELECTRICAL SAFETY ON PAGE 23!*

Electrical Components

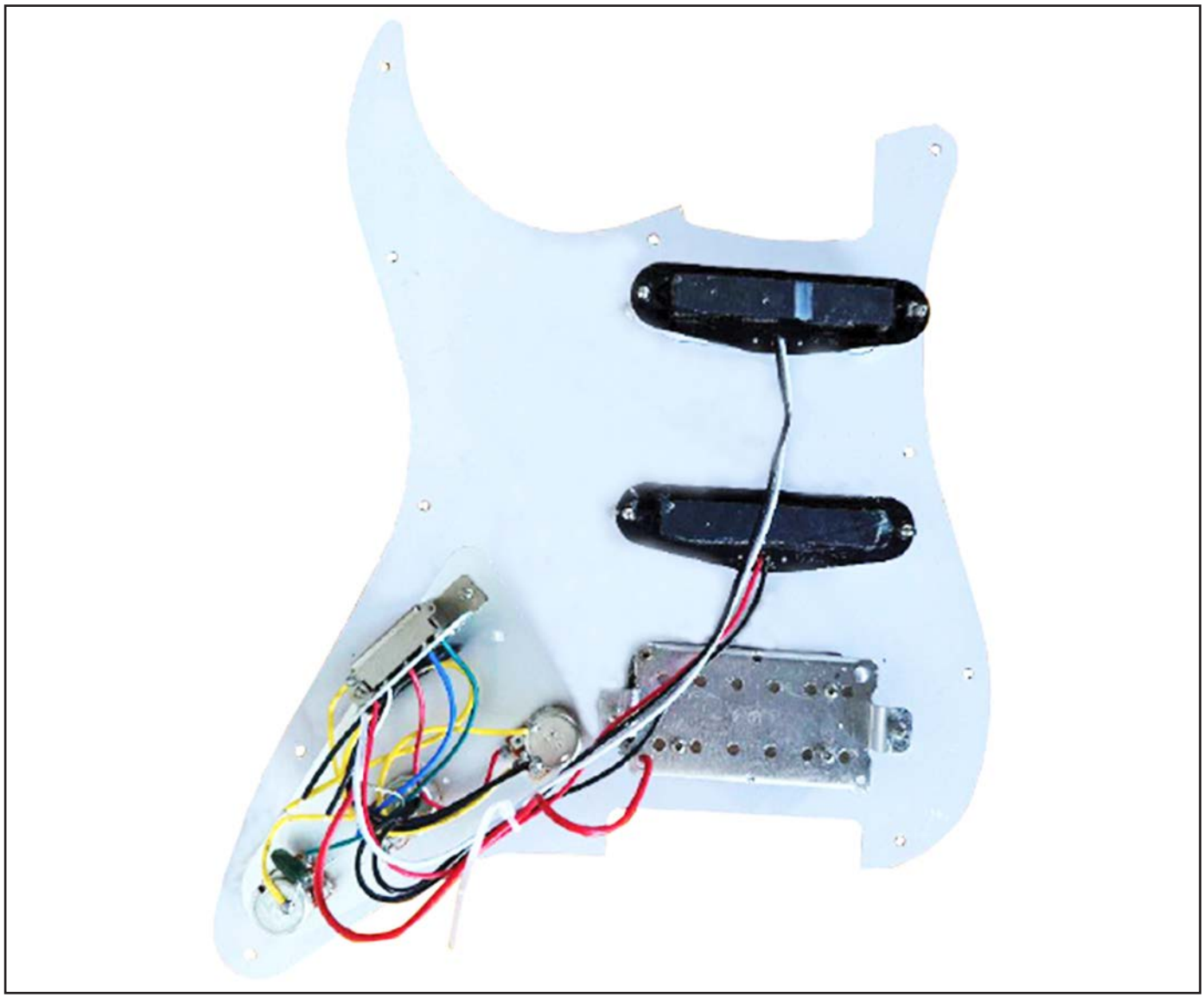


Figure 37. Pick guard wiring.

Figure 38. Output jack wiring.

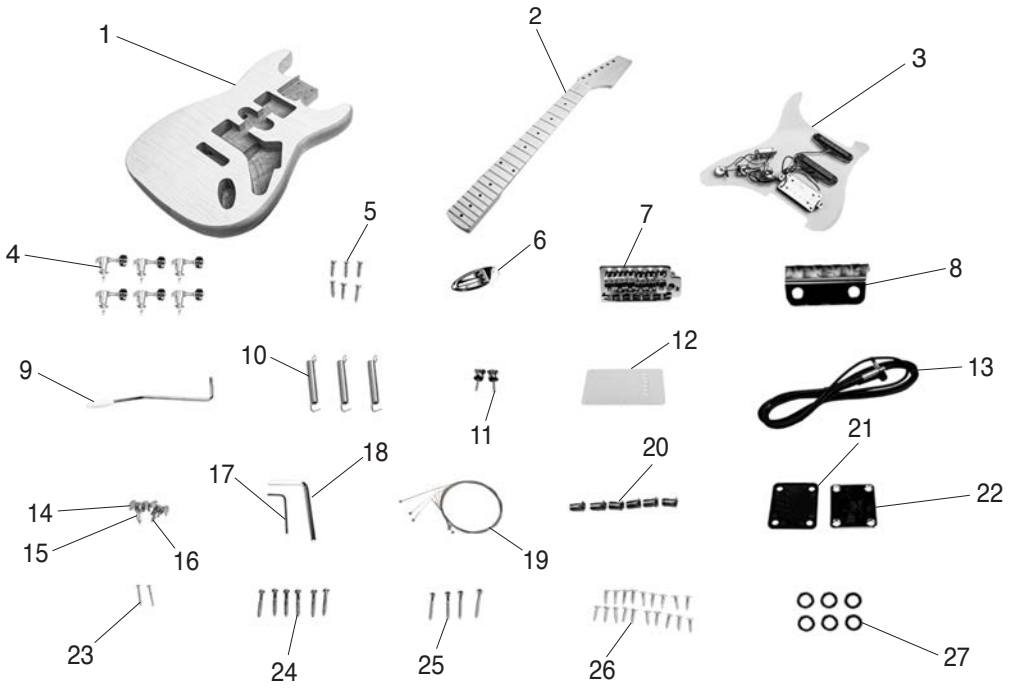
Figure 39. Ground wiring.

STOP *READ ELECTRICAL SAFETY ON PAGE 23!*

SECTION 8: PARTS

We do our best to stock replacement parts when possible, but we cannot guarantee that all parts shown are available for purchase. Call **(800) 523-4777** or visit **www.grizzly.com/parts** to check for availability.

Main



REF	PART #	DESCRIPTION
1	PT33955001	BODY QUILTED MAPLE
1	PT33956001	BODY FIDDLEBACK MAPLE
2	PT33955002	NECK
3	PT33955003	PICK GUARD
4	PT33955004	TUNING MACHINE
5	PT33955005	PHLP HD SCR M2 X 14
6	PT33955006	OUTPUT JACK
7	PT33955007	TREMOLO BRIDGE
8	PT33955008	SPRING HANGER
9	PT33955009	TREMOLO ARM
10	PT33955010	TREMOLO SPRING
11	PT33955011	STRAP BUTTON
12	PT33955012	BACK PLATE
13	PT33955013	GUITAR CABLE

REF	PART #	DESCRIPTION
14	PT33955014	STRING RETAINER
15	PT33955015	BUSHING 4 X 5 X 3
16	PT33955016	PHLP HD SCR M2.5 X 14
17	PT33955017	HEX WRENCH 1.5MM
18	PT33955018	HEX WRENCH 4MM
19	PT33955019	STRING SET
20	PT33955020	TUNING MACHINE SEAT
21	PT33955021	NECK PLATE GASKET
22	PT33955022	NECK PLATE
23	PT33955023	PHLP HD SCR M3.5 X 30
24	PT33955024	PHLP HD SCR M4 X 50
25	PT33955025	PHLP HD SCR M5 X 45
26	PT33955026	PHLP HD SCR M3 X 12
27	PT33955027	TUNING MACHINE WASHER

WARRANTY & RETURNS

Grizzly Industrial, Inc. warrants every product it sells for a period of **1 year** to the original purchaser from the date of purchase. This warranty does not apply to defects due directly or indirectly to misuse, abuse, negligence, accidents, repairs or alterations or lack of maintenance. This is Grizzly's sole written warranty and any and all warranties that may be implied by law, including any merchantability or fitness, for any particular purpose, are hereby limited to the duration of this written warranty. We do not warrant or represent that the merchandise complies with the provisions of any law or acts unless the manufacturer so warrants. In no event shall Grizzly's liability under this warranty exceed the purchase price paid for the product and any legal actions brought against Grizzly shall be tried in the State of Washington, County of Whatcom.

We shall in no event be liable for death, injuries to persons or property or for incidental, contingent, special, or consequential damages arising from the use of our products.

The manufacturers reserve the right to change specifications at any time because they constantly strive to achieve better quality equipment. We make every effort to ensure that our products meet high quality and durability standards and we hope you never need to use this warranty.

In the event you need to use this warranty, contact us by mail or phone and give us all the details. We will then issue you a "Return Number," which must be clearly posted on the outside as well as the inside of the carton. We will not accept any item back without this number. Proof of purchase must accompany the merchandise.

Please feel free to write or call us if you have any questions about the machine or the manual.

Thank you again for your business and continued support. We hope to serve you again soon.

For further information about the warranty, visit **https://www.grizzly.com/forms/warranty** or scan the QR code below to be automatically directed to our warranty page.

WARRANTY

grizzly.com